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ART. I. *On the Secale Cornutum, or Ergot.* By W. P. DEWEES, M. D. Adjunct Professor of Midwifery in the University of Pennsylvania.

THE ergot has obtained throughout this country, as well as in Europe, a reputation as a powerful auxiliary in the practice of midwifery. But great diversity of opinion seems to exist, as to the precise estimation in which the article should be held; its claim being extravagantly urged by some practitioners, while by others it has been condemned as useless, and its employment even deprecated. Under these circumstances, it may be considered as not altogether uninteresting to inquire, what are its real powers; under what circumstances it is useful; and, what are the rules which should be attended to, in order to prevent any evil following its exhibition.

The action of the ergot appears to be specifically upon the uterine fibres; urging them sooner or later to more or less violent contraction. It is not the alternate contraction alone that is increased by this substance; the tonic, which is of much more value, is also powerfully augmented; since it can, in consequence of this power, be most advantageously employed, in many cases where this effect is all-important. In this respect it appears different from other stimuli, which may exert an influence upon this organ; such as opium, the oil of cinnamon, volatile alkali, &c.; or the mechanical stimulus of the forceps, vectis, or the hand.*

* I have never witnessed any exaltation of the powers of the arterial system, or any other marked effect, (if we except its specific action,) from the exhibition of the ergot, though I have been very attentive to the subject. But it is declared by Dr. Oslere, on the authority of Dr. Erskine and others, that it slightly increases the fulness and frequency of the pulse; produces a glow

Each of the stimulants just mentioned, has been known to rouse the alternate contractions of the uterus into a temporary, and sometimes successful action; but after neither does the tonic contraction follow, with any degree of certainty; nay, we may with much truth declare, that inertia of this organ is very apt to follow their employment. Thus we witness hæmorrhage sometimes succeed the use of either of the remedies just named, though successfully exerted as regards the mere delivery. But so far as my own experience goes, or a pretty extensive inquiry will justify the declaration, I can say, that neither myself, nor such of my friends of whom I have asked the question, have ever witnessed such a consequence follow the use of the ergot.

So far then, I think we may with much confidence declare, that every other stimulus which has contributed to the energy of the uterus, except the ergot, has been followed occasionally by inertia of that organ; this fact is of high practical importance, as it leads to an almost certain mode of treating such females as may be habitually liable to floodings after delivery. It also, on the other hand, points out a caution of equal practical importance; namely, not to exhibit it, when there may be a chance that turning may be necessary; but more of this presently.

There is another peculiarity attending the action of this substance, not less remarkable, perhaps, though not equally important; namely, the promptitude of its action; for we have constantly observed, that if it do not manifest an influence in twenty minutes, or half an hour at farthest, it utterly fails. The action of this substance is generally so extremely prompt, as sometimes to create a doubt of its agency in the minds of those unaccustomed to its influence But I am quite certain, that the ergot never acts with so much efficacy as when it acts quickly; indeed I might say that its success is almost in proportion to its promptitude.* By many, this very sudden action of the uterus has been attributed to coincidence, rather than the effect of the

over the surface; excites nausea and sometimes vomiting, and pain and giddiness of the head.—*Philadelphia Journal of the Med. and Phys. Sciences, No.* 3, *N. S.*

As far as I have been able to determine, the effects of this substance are confined to the nervous system; and through its intervention, acts specifically upon the uterus. Nor are its powers confined to the human uterus; it acts with equal and similar efficacy upon the uterus of the brute. We are told it is familiarly used near Lyons, to aid the parturient cow.

* Goupil says, "la rapidité avec la quelle le sèigle a produit son effect est réelment surprenente; elle feut être comparée á l'action de l'émétique." *Journal des Progrès, Vol. III.*

remedy. This may occasionally be the case, as we see changes similar to those effected by the ergot, take place as suddenly where none has been exhibited; but it would be unfair to declare this to be the case always.

Thus, on the 11th of November, 1827, I was called to Mrs. V. in labour with her fifth child; the waters had discharged themselves half an hour before my arrival, and the patient had experienced a number of very smart pains. After the escape of the liquor amnii, they abated both in force and frequency. On the accession of a pain I examined my patient, and found the presentation to be a first presentation, and the head arrived at the inferior strait; the mouth of the uterus was fully dilated, and every thing gave promise of a speedy delivery. But the pains became still more feeble and longer apart, and after waiting an hour and an half for their amendment without advantage, I resolved upon exhibiting the ergot; especially as my patient became clamorous for its exhibition. The ergot was accordingly sent for; the messenger had scarcely left the house, before the powers of the uterus were spontaneously roused, and with such efficacy that the child was upon the point of being born, when it arrived; it was, therefore, not given; ten minutes more were all that was necessary for the completion of the delivery. In this case, had the ergot been given, the alteration in the action of the uterus would doubtless have been attributed to it, by those unacquainted with the peculiarities of its action; yet an experienced eye and ear would readily have detected its want of efficacy, did it exert no power, as well as be able to determine its agency, if it co-operated with the newly-awakened powers of the uterus.

As regards myself, I have the most firm reliance upon the powers of the ergot. And, the character of its action is so distinctly marked, that a very little observation will enable us to detect it. Whether or not the peculiarity of the effort produced by the ergot has been observed by others, I cannot say;* it appears to be perfectly well defined and characteristic; so that I think I am always able to distinguish the cases of coincidence, from those in which the ergot was decidedly operating.

When ergot has been administered with success, we find the uterine effort not only more quickly repeated, and more powerfully exerted, but these efforts are accompanied with less suffering, than the same apparent exertions of this organ, where not urged by this drug.

* Many speak of its specific action; or of its specific influence, but I do not recollect to have seen any account of the details, in what these specific effects consist.

The woman, when interrogated with respect to her feelings, expresses her sensations by saying she feels "as if every thing was forcing from her;" but at the same time admits, that the pains have not the same character with those she suffered before: indeed, it very frequently happens, that there is a great abatement of suffering, by converting a concentrated pain, and this most frequently in the back, to a more generally diffused one over the abdomen; or by obliging the back to participate if the abdomen has been the particular seat of it. At the same time, it must be confessed that the intervals between the contractions are more uncomfortable, as an almost constant nisus is kept up by the excited, or rather, it would seem, the goaded uterus, though the sensation does not amount to pain. Now the presence of the circumstances just noticed, constitute the peculiarity of the action of the secale cornutum.

Some of my medical friends, but they are very few indeed, declare they never have witnessed *any effect whatever from the ergot even when it has been administered in large doses.** I account for this discrepancy of result, only by supposing the ergot which they employed was effete; a circumstance, I have reason to believe from experience, of no unusual occurrence.

The like want of faith in the powers of this article, seems to prevail with many respectable practitioners in Europe; and which may be accounted for, perhaps, upon the same principle. Dr. Davis, an accoucheur of deserved eminence, says that "the pretensions of the secale cornutum have been generally known to the profession for nearly twenty years; yet the actual fact of its power, has not been satisfactorily established; nor is there evidence of its having, in a single instance, superseded the necessity of using the forceps."† This assertion, it must be observed, is one which admits of no possible demonstration; since it would be impossible to prove, that the case in which the ergot appeared to be successful, would absolutely have required the use of the forceps, or that the cases relieved by the forceps might not, in many instances, have been successfully treated by the ergot: yet so far, I can safely aver that a number of instances have occurred, in which I believe I should have employed the forceps, previously to my acquaintance with the powers of the ergot, but which were terminated by this drug, both promptly and safely. And fur-

* Chaussier and Madame La Chapelle, also declare they have never witnessed any effects from the ergot, in the trials they made of it, in "La maternité de Paris."

† Elements of Operative Midwifery.

ther; I am certain that I do not now use the forceps once, where I formerly used them ten times.

And the reason of this abatement in the employment of the forceps, may I think, be justly attributed to the almost universal use of the ergot, by every kind of practitioner of midwifery; and hence I presume, that the secale cornutum, now achieves deliveries, that would have required the forceps formerly; for were this not the case, I think I should be called upon as formerly, to aid the labour with these instruments.

As every thing depends upon the proper quality of the ergot, it should be kept whole in a glass bottle with a ground stopper; and only powdered, pro re nata; nor should it ever be used when it exceeds a year in age;* for the ergot, like almost every other vegetable substance, is easily acted upon by heat and moisture; and consequently, it is easily deteriorated when exposed to their influence. I have in several instances failed to produce the slightest effect with the ergot procured at one shop; whilst, that from another, in the same patient, has been as prompt, as efficacious.

I have generally administered the ergot in substance; some prefer it in infusion.† Twenty grains in a little sugar and water may be given at once; and I seldom exceed this quantity; as I have rarely found the further exhibition of it attended with better effect. My valued friend, Dr. George Holcombe, of Allentown, N. Jersey, objects very strongly to the quantity just named; and proposes much smaller doses, but more frequently repeated; or as often as it may be necessary.‡

* We are however informed, by Lorinser, (Edinb. Med. and Surg. Journal, for Oct. 1826, p. 453,) that it preserves its powers perfectly for two years, as far as regards its operation on the stomachs of men; but whether it retains its specific powers upon the uterine fibre for that period, does not appear to have been ascertained by his experiments. On the other hand, we are directed by Goupil, (Journal des Progrès des Sciences, et Institutions, &c. vol. iii. 1827, p. 170,) in order to be certain of the peculiar properties of this substance, to use it the same year in which it has been collected; and that it must be kept in bottles hermetically sealed; and not be powdered, but as it may be wanted.

† Bordot informs us, that the old women in the department of "Cote d'or," infuse a handful of this substance in a cup of water, and give a table-spoonful of it every five minutes. This dose, Goupil observes, is much stronger than that pointed out by accoucheurs; but he says we must notice the manner in which it is taken, as it is much less active than when given in powder.—*Ib.* p. 171.

‡ See Philada. Journal of the Medical and Physical Sciences, Vol. II. N. S. p. 317.

I think I am every way right, when I say, that there is no decisive instance extant, in which the "ergot" has had a direct unfriendly influence upon the child. I am aware much has been said to the contrary, by many respectable practitioners; but I think it would be no difficult matter to show, that when a still-born child has followed the exhibition of the "ergot," it has been constantly owing to the following circumstances. First, it has been given too early; that is, long before any reasonable expectation *should have been entertained*, that delivery would soon follow its exhibition, owing to the want of relaxation in the soft parts: second, given when the head has not been well situated, and the practitioner perhaps not aware of this circumstance; consequently, making a wrong estimate of the time that must elapse before delivery could take place, after its exhibition. This latter error very commonly arises, from the facility with which the head of the child may generally be felt; or its supposed disposition to escape through the external parts, because they, as well as the uterus, are favourably disposed. No mistake is more common, among those who are ignorant of the mechanism of labour; for they suppose there is little to do; and "were the pains but *a little stronger*, the child would soon be delivered:" under this delusion the ergot is given, with the expectation of a speedy issue. But this does not take place agreeably to their hopes, and very much to their surprise; for they are altogether unable to account for its failure. Whereas, an enlightened practitioner, would instantly have detected the wrong position of the head, and would have seen at once, how much was yet to be effected before delivery could take place. He would also have been able, very nearly, to determine the time and the degree of effort it would have required to terminate the labour; and he would have withheld the ergot, until more had been done by the unaided contractions of the uterus. But the better to illustrate this fruitful source of error, we will first refer to the position of the head, when not well situated: and second, to the difficulty the head sometimes finds in undergoing these changes, even when it is well situated, and the soft parts, favourably disposed.

1st. The difficulty arising from the position. Thus, in the fourth, fifth, and sixth presentations, there may be much delay, from the forehead being sometimes obliged to come under the arch of the pubes; in the two first, probably, if not changed; and unavoidably, in the last; which circumstance may have escaped the calculation of the practitioner at the time he exhibited the ergot, or he may have been ignorant of it; consequently much unlooked for delay may ensue, and this sometimes to the injury of the child and the uterine parietes. But in

this case no blame should attach to the "ergot" specifically, for the same consequences will follow from the long-continued efforts of the uterus, where none of this substance has been administered. Baudelocque gives us instances of this kind, and every practitioner of any standing must have observed the same thing. Indeed the danger to the child after the evacuation of the waters, is always in proportion to the tonic power and the continuance of the alternate contractions of the uterus; hence we have always reason to apprehend that the child will be still-born, when the uterine contractions continue very long, and with much force after the discharge of the liquor amnii: we are persuaded this is agreeable to the experience of all who practice midwifery. If this be so when no "ergot" has been administered, it may certainly, á fortiori, happen after it has been given, without any blame justly attaching to its powers. Some have carried their apprehensions of this substance so far as to declare it will produce vesications, and inflict other injuries upon the child's skin in the short time that shall elapse after its exhibition and the final termination of the labour. This is even more incomprehensible and incredible than the influence of the imagination upon the fœtus in utero, at least it should be classed with it.

2d. The difficulty the head sometimes finds in undergoing the changes necessary for its escape from the pelvis when the soft parts are well disposed.

This may arise from several causes. First, when a proper relation does not exist between the head and the pelvis, even when the head is well situated. When this happens, a long series of efforts will be required to force the posterior fontanelle to place itself under the arch of the pubes, and nothing but an enlarged experience, with an entire knowledge of the mechanism of labour will enable the practitioner to determine the quantity of force, and the lapse of time that will be required for this purpose. In this case, should the "ergot" be resorted to, it will be blamed, if the child be still-born, when it is altogether the fault of the practitioner—for in this case the "ergot" should not have been given, so long as the natural pains continued powerful; for it is not so much by multiplying the force, as by repeating its application, that the desirable end is effected. We have known the "ergot" given under these circumstances, and the uterus to become exhausted by being thus unduly urged; and the only resource ultimately has been in the forceps. Second; at other times when the posterior fontanelle has even placed itself under the arch of the pubes, it will sometimes require the long-continued and the often repeated efforts of the uterus to carry the parietal protuberances below the

tubers of the ischia. Now if "ergot" be given in this case, and the child be still-born, it may be blamed, when it had no agency in the disaster.

Dr. Henry Davies says, "it may be observed that in some cases, when the pelvis was a little confined, and when the head was not sufficiently low down for the application of the common forceps, the secale has been successfully used, and the child delivered with the forceps: very great discretion in these cases is required."* Dr. Davies gives several well marked instances of the influence of the ergot in feeble action of the uterus.

But certainly the most common cause of the failure of the "ergot," is owing to its injudicious and indiscriminate exhibition. It has been given we have well ascertained, before the membranes have been ruptured, the os uteri at all dilated, and the external parts quite rigid. What but defeat and injury can result from such an improper use of this powerful aider of uterine contraction? This substance is now in familiar use among midwives who have neither principles nor experience to direct its proper employment, and we are credibly informed it is used in this city by a practitioner in extensive business, in almost every case to which he is called.

This is truly the abuse of a valuable remedy; for if our information be correct, the too free use of it in this gentleman's practice has occasioned very many prolapsus uteri. This effect of the ergot may perhaps be questioned by some, but I have not the smallest doubt of the fact, from what I have seen when this medicine had been improperly taken. A lady aborted at a little beyond the fifth month, with twins. The involucra did not come away for several days after the expulsion of the embryos; and as these came off in one mass very soon after taking twenty grains of ergot in powder, the lady could not be persuaded but that one of the placentæ remained, and became very anxious for its discharge, and desired that another dose of the ergot might be given her. This I absolutely refused; but at the same time assured her in the most positive manner that nothing remained to come away. She, however, it seems was not convinced; for I had scarcely left the house before she caused another portion of the ergot to be given her. The consequences were a repetition of violent pains, and the escape of a considerable portion of the uterus through the os externum. She became now excessively alarmed, and I was sent for in haste. I found her in great agony; an agony resembling that of the last moments of labour; and upon examination the uterus was found in the situation just mentioned.

* Medical and Physical Journal, July and August, 1825.

The uterus, owing to the constant and violent nisus created by the ergot,* was restored with some difficulty, and the pains were appeased after a while by large doses of laudanum. She was obliged to wear a pessary for a long time before the uterus recovered its position.

I am, therefore, convinced that much future injury has been sustained by giving this medicine in cases where there is little or no resistance to be overcome: for in such cases the increased efforts of the uterus, produced by the ergot, continue after the child is delivered as its impression does not immediately wear off. In this case, it took place at a time when the uterus had nothing to support or retain it within the pelvis; it must, therefore, become prolapsed if not protruded.

From what has been said, it would appear that the ergot is a powerful medicine; so powerful, indeed, that well defined rules should be laid down for its use. It would seem that it is the improper exhibition of this drug, and not any specific power, that creates the evils but too commonly charged to it; also, that there is no satisfactory evidence of its exercising any baleful effects upon the child in utero.

The following rules for the use of the ergot, if attended to, I think will prevent any evil following its exhibition.

1st. It should never be given before the membranes are ruptured, the os uteri dilated, and the external parts disposed to yield.

2d. It must not be used so long as the natural pains are efficient, and competent to the end.

3d. But should they flag, from any cause, it may be given; provided the labour be a natural labour according to our acceptation of the term "natural labour;" that is, when the head, (if well situated,) the breech, the feet, or the knees, present. For independently of any accident which may complicate the labour, it is sometimes desirable, for the safety of the child, to hasten it when the natural powers are incompetent to this end.

4th. And if the labour be accompanied by any such accident as flooding, convulsions, syncope, &c. it may sometimes be employed to great advantage, provided rules 1 and 2 are not violated.

5th. It may be used very often with much advantage in every kind

* This effect of the ergot has often been noticed; the impression it makes upon the nervous system remains a long time, sometimes even after this substance has been rejected from the stomach; in this respect it is like opium and some other narcotics. Desgranges assures us he has seen the ergot ejected by vomiting, and yet the delivery has gone on with equal speed and certainty.

of premature labour; and at full time, when the placenta is not thrown off, and the uterus is found in a state of atony.

6th. Where flooding takes place after the rupture of the membranes; the os uteri well dilated; the pains feeble, but the child well situated.

7th. Where the head of the child has been left in the uterus by being separated from its body.

8th. Where the uterus is painfully distended by coagula.

Dr. WARD, of New Jersey, recommends that the ergot should be used, "in alarming uterine hæmorrhages, which sometimes take place before delivery, whether it takes place in consequence of a detachment of some portion of the placenta, it being attached to the fundus uteri, or whether it be owing to a separation of its attachment over the orifice of the uterus." In this advice, I cannot agree with this respectable practitioner; for, in the first instance, he states there can be no advantage derived from exciting or increasing pain, unless the os uteri be well opened and the membranes protruding, that they may be easily ruptured, if this can be done with propriety;* for until the liquor amnii be expended, the hæmorrhage cannot be arrested by exciting the alternate contraction of the uterus; and the tonic, by which this discharge can alone, under such circumstances, be stopped, cannot take place until the membranes have given way.

In the second case in which Dr. Ward proposes the ergot, we apprehend it would be decidedly mischievous; as it is found that in placental presentations, the flooding is always increased by pain; as it directly tends to augment the separation of the placenta.

It may, however, be said, that in the unavoidable hæmorrhage, an advantage may be derived from the exhibition of the ergot, by hastening the labour, though it may for a short time increase the discharge. But in order that this reasoning may have any value as a practical precept, the cases in which this advantage could be derived should be extremely well defined; nothing should be left contingent in a complaint so dangerous, and which has but one successful mode of treatment, so far as we yet know; namely, the delivery of the

* We say "if the membranes can be ruptured with propriety;" for this cannot and should not always be resorted to; for instance, it should never be done when the presentation is not natural, unless we mean to proceed immediately to artificial delivery. And if this should be deemed expedient, there can be no propriety in giving the ergot, for the less opposed we are by pain, during turning, the better. It, therefore, also follows that this substance should not be given in cases where it will be certainly necessary to turn; especially if the waters have been long drained off.

child. Now, with these admissions, we are well disposed to receive any evidence in favour of the remedy proposed, and for the particular species of hæmorrhage in question. And, if Dr. Ward will assure us, from his own experience, that the ergot will supersede the necessity of artificial delivery, from the promptness with which it effects delivery, we will hail this substance, as one of the most valuable of our therapeutical agents; but until this is done, we shall feel a reluctance to adopt this remedy in the cases under consideration, as *reasoning* appears to be decidedly against its employment.

Let me be borne with a little longer, as this subject is one of high interest in every point of view; for a placental presentation is always one of great danger, even under the best management; and it is almost necessarily fatal, under bad. Do not let me be supposed, in this investigation, to substitute reasoning for facts; for the very contrary would be my wish. But until I shall be in possession of unequivocal testimony in its favour, I shall remain, at least doubtful, of the safety of employing it.

I have in so many words declared, that reasoning is against the use of the ergot in the unavoidable hæmorrhage; I will now endeavour to show this to be the case. The primary object in all cases of hæmorrhage, is to arrest the bleeding; now, in the cases in question, this is particularly necessary, if it be even temporarily; and for this purpose a variety of means are resorted to; but, this cannot be done absolutely, but by delivery. Why should delivery be the only certain remedy in this case? for several reasons; first, because a temporary suspension of the bleeding is no security against its return; as the very mechanism of labour causes the placenta to detach itself from the mouth of the uterus; and when this takes place, hæmorrhage must ensue; and this in the exact ratio to the extent of the separation. Second, this being the case, it follows, that whatever tends to increase this separation, will necessarily augment the bleeding—uterine contractions have this tendency; and the ergot is almost certain to provoke or increase uterine contraction; consequently, to increase hæmorrhage. Third, because pains may exist for some time, without the os uteri being disposed to yield; yet during the return of each pain, the hæmorrhage is increased; consequently, if the uterine contractions be increased in force or frequency by any agent whatever, and the mouth of the uterus does not dilate in the same proportion, mischief, instead of good, must be the result.

For these reasons, we are of opinion, that the ergot should not be used in cases of placental presentations, as a general practice; and if

used at all, it should only be when the os uteri is well dilated, or easily dilatable. In such cases, it may be occasionally useful, by urging the uterus to brisker contractions; and thus effect the delivery of the child, as speedily, perhaps, as if turning had been resorted to; especially, if this must be attempted by the inexperienced practitioner.

The ergot may be used with a fair prospect of success, when the head of the child has been left within the cavity of the uterus after the delivery of its body, when no objection can arise from the unhealthy condition of the pelvis.

I have also derived much advantage in several cases of menorrhagia, where the long continuance of the disease, rather than the immediate excess of the quantity discharged rendered it important, it should be arrested. I have given in such cases one grain, three times a day, in the form of a pill, and continued it for some time.

It may also be useful in cases of polypi; where it shall be desirable to force these substances beyond the neck of the uterus, for the purpose of applying a ligature, or with a view to their excision. I have some time since, suggested its probable usefulness in hydatids of the uterus;* and its value in such cases has been in part realized by Dr. Macgill.†

Art. II. *Case of Obstinate Cough, occasioned by elongation of the Uvula, in which a portion of that organ was cut off, with a description of the instrument employed for that purpose, and also for excision of scirrhous tonsils,* by Philip Syng Physick, M. D. Professor of Anatomy in the University of Pennsylvania. [With a plate.]

In June last, a young lady afflicted with a very obstinate cough, applied to Dr. Physick, and gave him the following history of her case, drawn up by her physician at New Orleans.

"The first circumstances which had any connection with the singular affection of this young lady, were, a complaint of constant head-ache, attended with a disposition to vomit without nausea occurring first, during convales-

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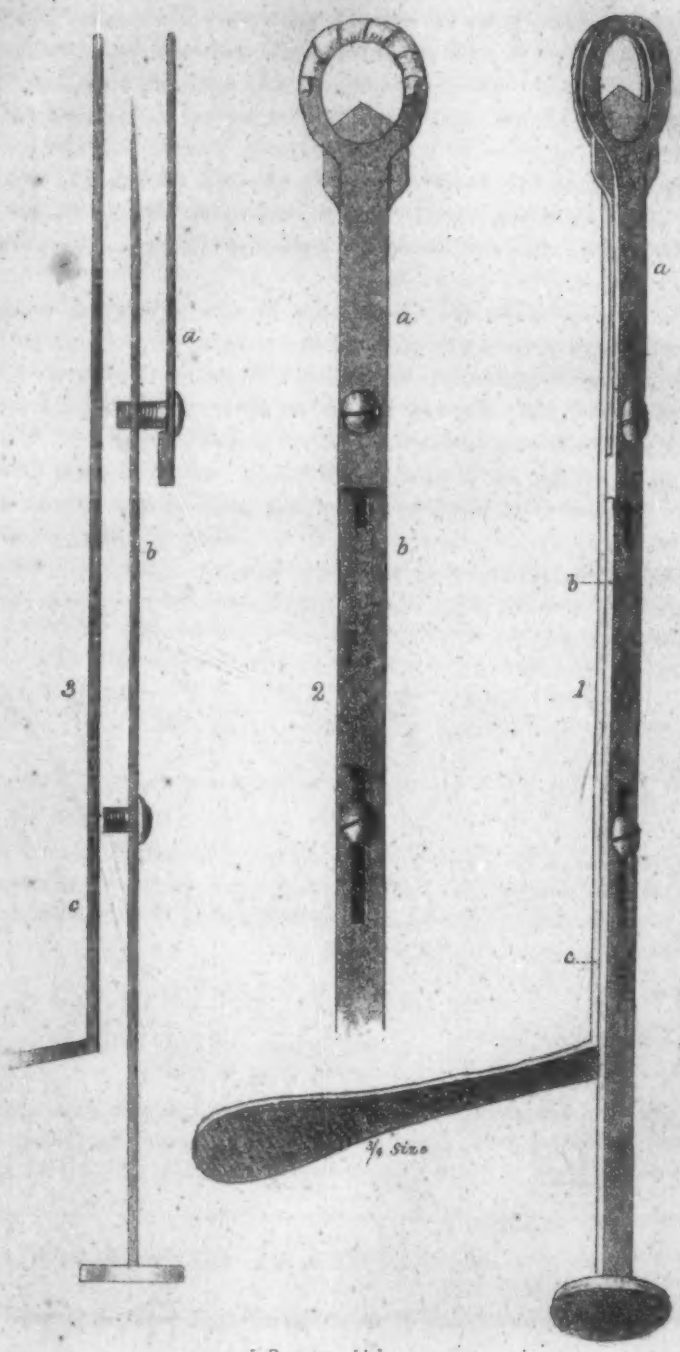
* See Treatise on the Diseases of Females, Chap. "On Hydatids of the Uterus," by the author.

† See his interesting case in the preceding number of this Journal, p. 240.

Plate 3, vol. 1.



J. Drayton Lith.

cence from an attack of remitting fever, in the middle of May, 1826. The latter symptom soon became the most prominent, and increased to a constant effort to retch, in which nothing was thrown up from the stomach, and which was not relieved by free vomiting. At this time no complaint of pain was made any where but in the head.

"Considering the gastric irritation as sympathetic of an incipient cephalic affection, leeches were applied to the temples and behind the ears, and some doses of active cathartic medicines given. No advantage was derived. The retchings became nearly constant, and from a noisy effort to vomit, it gradually changed to a convulsive cough, altogether involuntary and uncontrollable, and conveying an impression as if something obstructed and irritated the organs of respiration. This is, as nearly as it can be described, the character of the cough ever since.

"The first paroxysm increased in violence for a number of days, and until the 8th of September, when, about mid-day, after vomiting, (which was at this time not unusual with her,) in which she threw off a quantity of white tough mucus, she fell into a state of extreme prostration. The cough ceased and she appeared to be dying. From this she slowly revived through the evening, and on the next day there was a degree of reaction amounting to fever, which gradually subsided and left her quite well.

"The mucous expectoration, likewise, though at the time regarded with some interest, has, in the latter attacks, been produced occasionally in vomiting, but never followed by the same alleviation. On the recovery from the first attack, she remained well for two weeks, when she was again seized with the same spasmodic cough, attended with pain in the breast, but not preceded as before with any irritation of the stomach. This, after continually increasing in violence for about eight days, again left her in nearly the same manner it had done in the first instance. After an interval of three weeks, she had another attack of the same duration, and of extreme severity. Since this there has been two more, but at longer intervals, and not altogether of the same severity.

"The dates of the different paroxysms are the early part of September—of October—of November—of January—and of May. During the long interval between January and May, a slight cough of the same peculiar character has seized her every morning on awaking, after which she remains entirely exempt for the remaining twenty-four hours. At first it lasted for a few seconds only, but its duration gradually increased to thirty or forty minutes. Since the last violent attack it has been reduced to only a few moments continuance."

After many remedies had been used in the above case, without affording any permanent benefit, the patient was sent to Philadelphia, and Dr. Physick consulted. The circumstances appeared to him to point out an elongation of the uvula as the cause of the disease. On examining the throat, he found such an elongation actually existed. This was explained to the patient and to her friends, and the excision of a part of the uvula was performed, immediately after which all the symptoms ceased entirely, and have not since returned in the slightest degree.

In the operation of cutting off the uvula, Dr. Physick has, until very lately, used scissors; but being unable to complete the operation by one application of that instrument, several have been necessary to effect the division of the part. To obviate this difficulty, he determined to try the old instrument, as modified and represented by Benjamin Bell, in his System of Surgery. He found, however, that although he could divide with that instrument, the greater part of the uvula, a portion of the membrane that covers the back part of it, was not always divided, making the use of scissors necessary to cut it through. To remedy this inconvenience, he caused an instrument to be made as represented in the annexed figure, having two plates instead of one, between which the knife was passed, but still the same difficulty was experienced in cutting through the membrane on its posterior part. He then thought of wrapping a strip of waxed linen over the semi-circumference of the opening, to support the membrane until it should be divided by the knife. Thus constructed, the instrument answered his purpose completely, and cut through the whole substance of the part in an instant. Dr. Physick has since used an instrument of similar construction for the removal of scirrhous tonsils. He finds it easy to cut off the whole, or any portion that may be necessary, of the enlarged tonsil in this manner. The operation can be finished in a moment of time. The pain is very little, and the hæmorrhage so moderate that it has not required any attention in four cases in which the doctor has lately performed it.

The instrument is so accurately represented in the annexed plate, that a very brief description of it is all that can be required. Three views are given; 1st, a perspective; 2d, a front; 3d, a side view, the parts separated to show them more distinctly. The whole instrument is made of steel, and consists of two plates, *a*, and *c*, between which is the cutting-blade *b*. The upper plate, *a*, is short, and is fastened to the lower, *c*, by a screw, which passes through a groove in the blade *b*. The lower plate *c*, is longer than the upper, and is bent at one end so as to form a handle. Between these two plates is the blade *b*, one termination of which is somewhat lance-shaped and sharp, the other has a button on it, upon which the thumb is pressed, when it is wished to push forward the blade. The blade is made to move steadily by the screw, which connects together the upper and lower plate, and also by a second screw which passes through a groove in the blade and fastens in the lower plate.

In figure 2, the strip of waxed linen is represented wound round the semi-circumference of the opening.

The size of the perforated end of the two plates, and of course

that of the knife must be larger in the instrument for extirpation of the tonsils, than in that for truncation of the uvula.

The instrument employed by Dr. Physick, was made by Mr. Henry Shively, No. 75, Chesnut street.

ART. III. *Observations on some points of Pathology.* By WILLIAM E. HORNER, M. D. Adjunct Professor of Anatomy in the University of Pennsylvania.

A FINE injecting matter may be pushed into any vessels into which red particles of blood can naturally penetrate. I have repeatedly filled the whole venous system from the arterial, so as to display all the fine venous meshes under the skin, and to infiltrate the body completely. Judging from these experiments, I am disposed to think that some of the phenomena of inflammation arise mechanically, and that the substance effused from vessels is in a measure according to the mass and momentum of blood flowing through them. Thus when irritation determines an increased afflux of blood to a part, if the calibres of vessels are not large enough to permit it to pass freely from the arteries into the veins, serous infiltration first of all occurs: if the afflux be augmented, then coagulating lymph, the particles of which are larger, is effused; and if there be a further augmentation of afflux, the red particles of blood are then effused through the lateral porosities of the vessels. The corresponding phenomena in fine injections, are, first the water, then the size, and lastly the colouring matter, from its particles being the coarsest of the mixture.

Though many dropsical effusions may be traced to irritation, yet I am disposed to think that some very great errors have been incorporated with their pathology, from the desire to adapt all the phenomena to one standard, to wit, inflammation. This at least I know, that in fine injections of whole adult dropsical subjects, no resistance scarcely is offered by the blood-vessels, and that the injected fluid escapes from them by their lateral parietes or porosities, as fast as it can be thrown in; manifesting thereby evidently a great laxity in their texture. This escape is generally in the order in which we see dropsies to occur, first in the ankles and feet, then up the lower extremities to the trunk; in the hands and wrist, and then up the pectoral extremities to the thorax.

The purpura urticans which occurs in the skin in dropsy, seems to be an extravasation of blood arising from the same passive or loose

texture of the blood-vessels. I have repeatedly seen the same sort of ecchymosis in the muscles of dropsical subjects, and in the interstices between them.

Pathologists have said much on the distinction between venous and arterial capillary hæmorrhage; I doubt very much the practicability of making out either case very clearly and distinctly from the other, yet they have rather unsoundly drawn the inference, that spontaneous bleeding from the venous system is passive, while that from the arteries is active. Judging from mechanical arrangement, I am inclined to think that all hæmorrhage not arising from violence or mechanical injury comes from the arteries; inasmuch as microscopical observation teaches us that the blood in getting into the extreme arteries is there confined to the smallest sanguiferous channels, and it is of course there that rupture is most likely to occur, for so soon as the blood reaches the veins the channels are larger, more dilatable, and therefore, less liable to be broken. Genuine venous hæmorrhage, is probably most frequently the result of obstruction to a large venous trunk, either by pressure on it, or by something similar; thus we see in women during pregnancy bloody spots of ecchymosis on the legs from ruptured veins; and in persons with varicose ulcers, frequent bleeding from the latter, when the erect position puts too great a column of blood upon them.

Red blood is excreted from the pleura in its severe inflammations, and judging from what I have observed, the order of the effusion is first serum, then coagulating lymph, and then red particles of blood, all of which may, as in inflammation of other textures be indicative of the gradual dilatation of the blood-vessels. The most remarkable instance of this successive secretion, excretion, or effusion, whatever it may be called, that I have met with, occurred the last winter in our dissecting rooms; in this case the marks of inflammation were all recent, and had supervened upon a tuberculous phthisis of both lungs. When inflammation occurs in the pulmonary tissue itself, it is always marked by an accumulation of red blood in their structure, giving them a red purple colour, (Bichat, Anat. Gen. Vol. 2d. p. 62.) by their increased weight, diminished elasticity, and by their being much more watery than usual, probably from the serum being separated from the red blood after death. There is also a considerable quantity of frothy mucus in the bronchia. This state of the lung is most frequently attended with a recent effusion of coagulating lymph on the pleura, and by a bloody serum in the thorax. It is, however, to be observed, that bloody serum being found in the cavity of the pleura is not an absolute proof of its being secreted or dis-

charged in that state, because if the examination be much postponed after death, the serum effused may be tinged by the lung soaking in it.

It is owing to the blood-vessels of the lungs being so superficial, that as in the intestines, their inflammations pass off either by an increase of their natural secretion of mucus, or by the effusion of serum and of blood. LAENNEC has said, (vol. i. p. 116,) that a collection of pus in the pulmonary tissue in consequence of inflammation, is one of the rarest of cases, at least it is one hundred times more rare than a vomica from tuberculous matter, and a thousand times more so than empyema. In all the dissections of lungs that I have made, I have met with it but once, and that lately, (June 29th, 1827,) at the Alms-house, in which case the surrounding part of the lung was gangrenous.

ART. IV. *Clinical Reports of Cases treated in the Infirmary of the Alms-House of the City and County of Philadelphia.* By SAMUEL JACKSON, M. D. one of the attending physicians.

IN the preceding number of this Journal, a continuation of clinical reports of cases occurring in the Alms-House Infirmary was promised. Those now reported are some of the most interesting that came under my notice, during the term of my duty in August, September, and October last. The history of the diseases, is chiefly taken from the case-book, in which the student of the ward, copies from his note and prescription book, the daily observations on each case and the treatment directed. The autopsical histories are principally from my own notes, and in some instances, I have supplied from the same source omissions in the history of the cases as kept by the students; and have corrected some few inaccuracies, none of them, however, are of material importance. I have to regret that several of the cases of highest interest, in consequence of the severe and protracted illness of Messrs. ASHMEAD, BETTNER, and HORNER, who were successively taken down with fever, contracted through fatigue, and probably from exposure to putrid miasm in repeated dissections, and the foul air of some of the wards that were over-crowded with patients, were kept in too imperfect a manner to be recorded.

An unusual number of fever patients entered the infirmary during my period of attendance. In August and September, most of the cases occurred in newly-arrived Irish emigrants. They were generally

persons of temperate habits, and good constitutions. This fever was a gastro-enteritis, with meningeal or other complications. Its occurrence in this class of people, I attribute to the sudden alteration in their diet, and change of climate. On inquiry, I uniformly received the information, that in Ireland, their diet had consisted of potatoes, oat meal, or buttermilk. Several had seldom tasted meat, and none oftener than three or four times in a year. From this temperate and moderate diet they were transferred at once, on ship-board, to animal food of the most stimulant character—salted meat. After arriving in the United States, they fell into our habit of eating meat daily, and sometimes two and three times a day.

The period at which they arrived, was also propitious to the production of this form of disease. July and August are the months of greatest heat, which never fails to awaken the gastric sensibility. Between the skin and stomach the sympathy is direct, and when the first has its irritations or actions excited, those of the last are increased at the same time. From this cause, those who pass from a temperate to a warm climate are subject to attacks of gastric and intestinal diseases. The sympathy between the skin and pulmonary system is precisely the reverse.

To the combined effect of the two causes that have been mentioned, I am disposed to impute the prevalence of fever amongst the newly-arrived Irish.

By the daily papers, it appeared, that the Irish who arrived in Nova Scotia were attacked, also, with fever. It was represented as of a most fatal character; carrying off nearly all who were its subjects. It was named malignant typhus. A considerable portion of our patients, were amongst those who arrived at St. Johns, but who immediately proceeded to Philadelphia. The mortality of the disease was but slight with us, and its character generally not intractable. To what is the difference to be attributed? The plan of treatment pursued with those under our charge, was strictly antiphlogistic, and those whom we lost perished chiefly in the chronic form of disease from disorganizations, induced frequently before the patients came under treatment.

The febrile cases of the last of September and the month of October were principally amongst the blacks, and in this class were often very unmanageable. In the majority of the cases of those months, both in blacks and whites, bilious symptoms—the irritations of the hepatic organs—were unusually predominent. Few cases occurred that were not attended with a jaundiced state of the skin and eye, and on examination all the white tissues were found of a yellow tinge.

Case I. *Remittent Fever—Gastro-Enteritis.*—Rebecca Stewart, aged twenty, was admitted July 30, 1827, into the Women's Clinical Medical Ward. She had arrived three weeks before from Ireland—was a month on the voyage—healthy aboard—has lived near the wharf—not exposed to the sun—been sick a week: attacked with pain in the head, debility, dryness of mouth, great thirst, and vomiting. No relief followed the vomiting. Took some medicine which vomited and purged her, and she felt better. At present she has no tenderness of epigastrium; skin very hot, face flushed and turgid, eyes full and injected, pulse full and frequent, muscular debility, nausea, deafness. ℞. Sp. mindereri, ℥viij.—sulph. magnes. ℥iss.—antim. tart. gr. iij. M. S. ℥ss. q. b. h.—Ordered cold to head and arms; barley water to drink.

July 31*st.* Seems better—pulse nearly natural—skin less hot—tongue red on the edges—its centre furred, but moist—a sensation of heaviness in the head—does not see or hear well—a little soreness at epigastrium—bowels freely opened—stools watery—all medicine forbid by Dr. Jackson. Ordered pearl barley water for drink, and cold to surface continued.

August 1*st.* Improving. Still complains of heaviness in the head, and noise in her ears, like the roaring of the sea—bowels open—no pain at epigastrium. Treatment continued as before.

4 P. M. An exacerbation of fever, probably owing to the excessive heat of the weather, declined towards night. The acidulated and iced water were relished and freely taken; also the cold ablutions, which gave much relief.

2d and 3d. All the symptoms abating—the face becoming pale—skin moist—tongue losing its redness—sight and hearing improved.

4th. Some little fever—bowels costive. ℞. Ol. Ricini, ℥ii.

5th. Is sitting up this morning.

10th. Convalescence uninterrupted. Allowed chicken soup; then milk, bread, roasted potatoes, &c. for diet.

Discharged well.

Case II. *Remittent Fever—Gastro-Enteritis.*—Mary Stewart, aged eighteen, admitted July 30, 1827, into the Women's Clinical Medical Ward. She is a sister of the subject of the foregoing case—had entered into service, and was employed in washing—attacked with the ordinary symptoms of fever, but the pain in the head unusually acute. Took an emetic and several doses of salts, which made her worse. She had no thirst previous to taking the emetic. At present her face is very much flushed—eyes injected—head painful—pulse quick, but not full—tongue furred and little dry—red on the edges

—thirst urgent—bowels open—her skin is hotter, and her aspect altogether less favourable than that of her sister. Ordered the following:—R. Sp. mindereri, ℥viij.—sulph. magnes. ℥iss.—antim. tart. grs. iij. M. S. ℥ss. q. b. h.

July 31*st.* Thinks that she feels a little better—pulse still quick and frequent—head heavy—seeing and hearing both impaired—bowels open—tenderness at epigastrium. Prescription of yesterday forbid by Dr. Jackson; ordered iced acidulated drinks; cold ablution; fifty leeches to epigastric region; the extremities to be enveloped in warm fomentations.

August 1*st.* No better—skin hot and dry—tongue red but moist—complains of pain and ringing in her head—pain at epigastrium—is weak—thirst intense. Ordered ablutions to be continued, and injections of cold mucilage to be repeated.

4 P. M. An exacerbation of fever—head much affected—eyes dull and heavy. Ordered fifty leeches to back of head and along the jugulars.

10 P. M. Violence of symptoms abated. She found much relief from the leeching and cold applied to arms, face, and head.

2*d.* Is better this morning. Her skin cooler—face less flushed. Treatment continued—R. Magnes. ust. ℥ii.

3*d.* Fever abated in violence.

4*th.* Not so well this morning. Fever increased about the middle of the night—mind quite flighty—skin hot, particularly about the head—tongue clean but moist—much thirst—pulse quick, feeble, but frequent—breathing hurried and laborious—pain at epigastrium—bowels open yesterday. Ordered cold applications to head and epigastric region, and injection of salts.

Night.—The cold has been continually applied, and she seems much relieved—skin far less hot—the eye less dull and watery.

5*th.* Exacerbation about the middle of the night—the mind wandering. She feels better this morning—less heat and flushing—breathing more natural—eye still dull and injected—pulse a little frequent—she sleeps a great deal—stools natural. Treatment continued as before.

Night.—Fever abated very much.

6*th.* Escaped the delirium and exacerbation last night—little fever this morning—face less flushed—skin softening. Treatment continued.

7*th.* Complete remission this morning. Ordered oat meal gruel.

8*th.* No fever—head still heavy—tongue less red.

9*th.* Improving—centre of tongue remains brown.

15*th.* Fever gradually declined. Its absolute solution marked by

no crisis. Her bowels, when necessary, were simply moved by small doses of magnesia or oil; the discharges natural. She had chicken-water, sago, &c. allowed for diet, and she has totally recovered without a relapse or sequelæ of the disease.

Observations.—The preceding cases recorded by R. L. Fearn, student, are examples of common remittent fever or gastro-enteritis, so common in the commencement of warm weather. They manifested cerebral symptoms, the invariable concomitants of acute gastric inflammation. The cerebral sympathetic irritation did not acquire an intensity sufficient to become independent of the gastric inflammation in either case. In Mary, on the first of August, the cerebral symptoms rapidly increased, and the irritation of the arachnoid and pia mater threatened to take the lead in the train of morbid phenomena. The application of leeches along the jugulars, and around the base of the head gave an immediate check to this complication.

The prescription directed in both cases previous to my visit to the patients, though a common formula in fevers was discontinued, that the existing inflammation of the mucous tissue of the stomach and intestines might be attacked by the most direct and appropriate means. That formula is certainly far preferable to the active and drastic cathartics frequently resorted to, and the employment of which has been so much misapplied and abused since the publication of Hamilton's work on purgatives. Still its immediate direct mode of operation is that of an irritant to the surface to which it is applied. This irritation it is true, under common circumstances generally produces secretion from the exhalent vessels and mucous follicles of the mucous tissue of the intestines, and a purgative operation is the consequence. This irritation and secretion are the essential element in the action of a purgative. But it is a well demonstated fact, that an irritant applied to an irritated surface, will as frequently dry up and prevent secretion as excite it.

Purgatives in the acute stage of fevers attended with inflammation of the gastro-intestinal mucous tissue, when they do excite copious secretions, counteract their own injurious tendency, and often arrest or diminish the inflammation of this membrane, when it is not deeply radicated or extensively diffused. It is, however, in the experience of every practitioner, that active purgatives in fevers frequently fail to produce evacuations: they cannot bring forth secretions from a highly inflamed surface, whose actions transcend the point at which secretion can take place. The irritation of the purgative, under such circumstances, is added to that already existing, and all the symptoms are aggravated.

The excitement of secretions and evacuations by purgatives in fevers very frequently, instead of alleviating the condition of the patient, renders it much worse. It is not uncommon that an apparent amendment will ensue from very free, copious, intestinal secretions procured by purgatives, for twenty or more hours, to which succeeds an aggravation of the precursory symptoms. The depletion operated in this manner on the general circulation, serves temporarily to tranquilize the sympathetic irritation of the central organ of the circulation; and, in consequence, the febrile symptoms—frequence and force of pulse, heat of skin, &c. depending on that condition of the heart, are for a short period abated. The symptoms of the local irritation may for a time be smothered from the extent of the evacuations, but they break forth with increased violence.

The administration of active purgatives in fevers, often proves injurious, by rendering extensive a morbid irritation which may be very limited. The purgative, irritating zone after zone of the mucous coat of the alimentary canal, as it passes along, becomes a conductor of the inflammation, restricted primarily to a small portion of this structure, and spreads it over nearly its whole surface. In the tegumentary tissue of which the digestive mucous membrane is a part, erythemoid inflammation, as it is called, has a strong disposition to propagate itself, even without a provocative. From this cause, those labouring under fevers, who are treated by drastic cathartics or other irritants, have the abdomen to become tumid, hard, painful to pressure, tympanitic—to be meteorized as these collective symptoms were formerly designated; the bowels are costive, and very little flatus is discharged. Here the inflammation has not passed beyond the ileo-cœcal valve and penetrated into the large intestines. This does occur, however, sometimes, and then is added to the foregoing symptoms, a diarrhœa with varied discharges of different hues and appearances; brown, white, black, and bloody, and involuntary stools, according to the intensity of the inflammatory action. When purgatives and other irritants of the gastro-intestinal mucous membrane are abstained from, or but sparingly employed, these symptoms are of very rare occurrence, in fevers even of a high grade of action, and which may prove fatal by the disorganization of the mucous membrane of the stomach, effusion on the brain, &c.

From these principles I have adopted the practice, the oldest in medicine, and if authority be entitled to consideration, sustained by the weightiest in our profession, of abstaining generally from purgatives in the commencement of acute fevers, and of combating, by directly debilitating remedies, the excessive actions in the tissues in

which they are located. From a comparative experience of several years practice on both systems, I am daily more convinced of the superiority of that I now pursue. Those cases of fever, in which the capillary irritation is of a light grade, or a limited extent, and in which purgatives prove successful remedies, the unmixed, positive antiphlogistic treatment, established on anatomical and physiological principles, will be found in the great majority to be more speedily cured, without the slightest risk being incurred of converting them into more formidable affections.

In the report of the case of Mary Stewart, it is remarked, that the fever gradually declined without any marked crisis. This circumstance is commonly observed in the diseases treated on the physiological plan. The morbid irritation being attacked in a direct manner, gradually yields, and with its diminution the sympathetic disturbances to which it gives rise, subside, and the organs resume their natural functions.

Case III. *Remittent Fever—Gastro-Enteritis.*—John Stewart was admitted July 30th, 1827, into the Men's Clinical Medical Ward. Face flushed—eyes injected and watery—skin very hot—pain in the temples occasionally darting and severe. Breathing deep and sighing—cough—tongue dry, pointed, very red, edges dry, surface of tongue a brownish fur—bowels moved, and were freely moved on the 29th by a purge—lips dry—some sordes on teeth—pulse 120, frequent, compressible. He had lately arrived from Ireland, after being six weeks at sea—was of temperate habits—was attacked July 22. Ordered neutral mixture, ℥ss. q. b. h; barley water and tamarinds; cold cloths to head, and to sponge arms with ice water; pediluvium pro re nata; cups to epigastrium; calomel and ipecac. in small repeated doses.

P. M. 4½. Fever abated—pulse rather slower and fuller—tongue the same—slight wandering of mind.

31*st.* Slept some—bowels not open—quite stupid in the night—eye watery and injected—skin hot and dry—pulse 128; moderate strength—tongue dry on surface and disposed to brown fur—teeth fuliginous—no pain—tenderness under left ribs. Ordered castor oil, ℥ss; cups to head; cold applications to abdomen; injections; thirty leeches to epigastrium; omit cal. and ipecac. and neutral mixture. Thin oat meal gruel and ice added to drink. If stupor continues after leeching, hot fomentations to legs.

Evening.—Tongue dry and skin rather hot.

August 1*st.* 4 P. M. Has been quite flighty—face is flushed—skin dry and hot—tongue dry and some fur, in the morning it was

dark—bowels open—tremor of hand—pulse 130, pretty full, active, and of moderate strength. Ordered cups to head; cold injections; cold to abdomen; warmth to extremities; sago water.

9 o'clock. Arms cool—face flushed—tongue covered with thick mucous fur, and inclined to moisture—less flighty—breathing rather laborious—pulse 120, soft, but some tension.

2d. Tongue dark, crusted and cracked, edges moist—fever high during the night—flighty—discharges thin and yellow—face cool—hands dry and warm—tongue disposed to dryness.

12 o'clock. Fever abated—more moisture of tongue.

6 P. M. Fever higher—rather stupid—pulse frequent, but pretty good—tongue same. Ordered cups to back of neck.

10 o'clock. Flighty—less stupid and more talkative—fever abated—skin moist—tongue same.

3d. Pulse reduced—fever less—tongue moistening and is better—slight wandering of mind—skin natural. Cold to head and abdomen continued.

5 P. M. Very little fever—tongue thick and moist in the centre—skin nearly natural—bowels open—slight tremor of hand.

4th. No fever all night, and slept—bowels open—stools consistent and yellow—tongue cleaning at the sides, centre incrusted and moist.

2 P. M. Complete remission and moisture of skin.

5th. No fever—tongue moist and cleaning—edges clean.

7th. Convalescent.

Observations.—This case, recorded by Mr. Ashmead, senior student, was precisely similar to the preceding. Stewart is father to the two girls, the subjects of the foregoing cases, and his disease was of the same character. It yielded very speedily to the same plan of treatment. All the members of this family, though residing in different parts of the city, were attacked at nearly the same time, with the same form of disease, inflammation of stomach and small intestines. This circumstance is a corroboration of the views presented of the exciting causes of remittent fever, amongst the newly-arrived Irish in the summer season. The bowels, it is to be observed, were regularly opened without the use of purgatives.

Case IV. *Remittent Fever—Gastro-Enteritis.*—F. Martin was admitted, July 26th, into the Men's Clinical Medical Ward. His tongue was brown and dry in the centre, edges white and moist—pulse soft, pretty natural, frequent—lips dry and scaly—bowels regular. He had lately arrived from Ireland, was eight weeks at sea, well on the passage, and when arrived worked one week in an ice-house, and sometimes in the day exposed to a hot sun—has been sick

one week—was taken with pains in the arms, and unable to move them—chilliness and sick stomach. Next day took a purge and continued his employment, but the day following omitted work and drank hot teas to produce perspiration, which relieved pains in shoulder. On 25th had head-ache and took a purge, and was admitted on 26th with his father, mother, and sister, all having fever. Ordered barley water and lemonade; cold applications, and neutral mixture.

2 P. M. High fever—head-ache—eyes reddish—face rather flushed—tongue red at tip, edges white and furred, with the impression of the teeth, centre brown and dry—lips and teeth dry—breathing hurried—skin hot and dry—carotids distinctly seen pulsating—sickness of stomach—pulse frequent, full, and strong—no tenderness of epigastrium.

8 P. M. Skin same—some moisture of palms—soreness of flesh—soreness of epigastrium—pulse frequent—sordes collecting on teeth—tongue same, but moist.

27th. Rested badly—short cough—fever abated about twelve at night—cannot stir his legs, and very sore—pulse frequent and pretty good—blowing respiration—tongue dry, tip red and dry. Prescribed fomentations to lower extremities; cups to abdomen, and treatment continued.

6 P. M. Bowels open—tongue brown in centre—pulse the same. 9. Skin hot—tongue moist.

28th. 8 o'clock. Rested badly last night—remission—pulse 100—tongue dry and dark in centre, edges moist and light, tip dry—sordes on teeth and lips—short dry cough, causing pain in breast—soreness of abdomen—soreness of extremities gone—bowels open—not very thirsty. ℞. Calomel and ipecac. M. ft. pil.; treatment continued.

5 P. M. Tongue same but moist edges—skin hot and dry—no pain of epigastrium or soreness of legs—pulse 100, less excited.

29th. Some remission—heat rather above natural—lips and teeth dry—cough—breathing hurried—bowels open—considerable fever all night.

6 P. M. Skin rather hot—teeth fuliginous—feels weak—tongue brown, dry, and cracked in centre—pulse pretty good.

30th. 6 A. M. Fever much abated—slept well. 9 o'clock.—Tongue same—skin hot—bowels moved—eyes little injected—thirsty—tremor of hands and legs—knit eyebrows—pulse 120 and rapid.

12½ P. M. Less hot, heat 102. Prescribed cold flaxseed mucilage to abdomen; cold to head; continue pills and neutral mixture. 3½ P. M. Skin hot and dry—tongue moist. Ordered leeches to epigastrium. 10 o'clock.—Tongue more moist—fever less.

31*st.* Tongue disposed to clean from edges, and moist—heat less—slept well—bowels open. Prescribed barley and tamarind water; cold to head, arms, and abdomen to be continued; cold injections; thin gruel.

P. M. Tongue cleaning—edges moist and red—skin hot and dry—in evening, fever abated. Prescribed cold to head, arms, and abdomen; cool mucilaginous injections; barley water acidulated.

August 1*st.* Fever returning—tongue dry and deep brown in centre—edges moist and tumid—skin dry and hot—eyes injected, and teeth fuliginous—small abscesses on legs—bowels open—mouth bitter. Ordered thin sago water acidulated; leeches to epigastrium and anus, and cold applications.

3½ P. M. Fever abated—skin moist—eyes not injected—no pain—teeth and lips dry—edges of tongue white and moist, centre dry and brown—pulse 100, some tension. 6 o'clock. Tongue moist, and fever abating—skin disposed to moisture—lower extremities dry.

2*d.* Skin cool—tongue on one edge moist, the other dry, centre dark and incrusted—pulse pretty good, full and soft. Treatment continued, and if fever continues, leeches to anus.

1 P. M. Considerable apyrexia—skin moist and natural—tongue moist and cleaning—pulse 80 and good. 7 P. M. Tongue dark in centre and incrusted, edges moist, some redness, and difficulty of protruding tongue far—pulse frequent and soft.

3*d.* No fever—edges of tongue moist—centre more moist and disposed to clean—pulse same—rested well.

3½ P. M. Tongue rather moist—no fever—skin natural—bowels open—not thirsty.

4*th.* Skin natural—tongue cleaning, moist and nearly natural colour—unable to stand—pulse 80—phlegmons on legs. Omit cold applications; ordered soup.

5*th.* Tongue tumid, with slight white fur—rather fullness of abdomen—skin moist and natural—no appetite—sleeps pretty well—pulse 72.

7*th.* Convalescent—tongue white and moist—pulse 60 in a minute. Discharged well.

Case V. *Remittent Fever—Gastro-Enteritis, ending in Chronic Colitis.*—L. Maran was admitted July 26th, into the Men's Clinical Medical Ward. Habits intemperate—frame robust. He was attacked on the 25th—had been complaining fifteen days. Had shortness of breath—no pain, but felt very ill—feeble—giddiness of head—bowels open—good appetite—rested bad—very thirsty last night. Ordered Castor oil, ℥ss.; neutral mixture, ℥ss. q. h.; fomentations to legs.

3 P. M. Great tenderness of epigastrium—skin hot and burn-

ing—sometimes he feels cold and chilly—pulse frequent, moderate volume, pretty good—tongue red at tip and pretty clean, but slight white fur towards the base—bowels open freely. Ordered cold to head, and cold sponging. 8 o'clock. Fever abated—breathing more easy—skin moist and warm.

27*th.* Tongue moist—pulse good—cough gives pain in head—soreness of breast abated—tongue very red, moist, and rather cleaning—skin rather hot—bowels open—no head-ache. ℞. Calomel gr. vj. and oil ℥ss. three hours after; cold continued.

3 P. M. Skin hot—pulse pretty good. 6 o'clock. Fever abating—tongue moist—skin rather hot.

28*th.* Soreness of legs—skin comfortable—bowels very open—tongue furred—pulse 100.

5 P. M. Pulse 120—no tension.

29*th.* Better—tongue moist, clean, and very red—bowels very open—skin rather hot—pulse small, frequent, tense. Ordered calomel, opii, ipecac. in small quantities frequently; soda powders; cold continued; omit neutral mixture.

6 P. M. Tongue cleaning—fever abated—pulse excited.

30*th.* No fever—skin natural—tongue clean, red, and dry in centre, edges moist—thirsty—rather dull—bowels better—pains in knees better—slept well. Treatment continued.

12 o'clock. Tongue very red—its circulation very rapid, more moist, centre dry—skin hot—breathing natural—pulse small, frequent, little tense—skin 102°—eyes injected—pulse 120, dullness.

3½ o'clock. Skin hot—tongue more dry—pulse excited. 10 o'clock. Fever abated—tongue disposed to dryness in centre, edges white.

31*st.* Skin dry and hot—pulse small and frequent—tongue moist, red, some fur—eyes injected, some tremor. Treatment to be continued; cold to abdomen; pills to be omitted.

Evening—considerable fever.

August 1*st.* Skin pretty natural—pulse 90—tongue clean, red, at tip scarlet—complains of great debility. ℞. Weak solut. sulph. quinine; omit cold applications; ordered sago for diet.

2*d.* Skin cool—tongue moist and cleaning—slight fresh fur—pulse regular, soft.

1½ P. M. Skin moist and natural—tongue rather dry in centre, clean at tip—pulse 85—at 7 o'clock tongue dryish.

3*d.* Dewy perspiration on forehead—skin moist and rather cool—tongue moist at edges, dryish in centre—bowels frequently open—stools watery. Ordered absolute diet, and to omit the mixture of sulphate of quinine.

From this period the febrile symptoms disappeared, and were replaced by a diarrhœa, the effects of chronic colitis or inflammation of the colon. It was treated for a week by Dover's powder, warm bath, and infusion of eupatorium. Profuse perspiration was induced. The diarrhœa was checked, but as soon as the sweating was discontinued, again returned. It was then determined to attack the inflammation by the direct antiphlogistic treatment. Cups were frequently applied to the abdomen, along the course of the colon; demulcent and opiate injections were employed daily, with occasional injections of solution of acetas plumbi. gr. i. to the ounce of water, together with a very restricted diet. It consisted of two soft boiled eggs and four crackers with barley water per diem, occasionally absolute diet, or barley water alone. This method soon controlled the disease; the stools became consistent and reduced to three, to two, and finally to one, in the course of the day. It was not without difficulty the diet was enlarged, each time that a little meat was allowed a relapse ensued. Ultimately on the 22d of September he was discharged well. The bowels had become quite regular, the stools natural, and he was regaining flesh. Crackers, boiled rice, with soup and boiled mutton, had been allowed him in small quantities previous to his discharge.

Case VI. *Gastro-Enteritis.*—Ann Maran, wife of L. Maran, aged forty-two, was admitted, July 26th, 1827, into the Women's Clinical Medical Ward. She had lately arrived from Ireland, by the way of St. Johns. Her fever is in its incipient stage. Skin hot and dry—pulse quick and weak—tongue moist—bowels regular—head but little affected. She took yesterday, dose of oil, and feels better from its operation. Ordered surface sponged with cold water.

28*th.* Disease more fully developed—skin very hot—pulse stronger—tongue still moist—bowels regular. ℞. Suc. Limon. ℥iss. Sub. carb. potas. q. s. ad saturand. Sac. alb. ℥ss. Aquæ pur. ℥iij. m. s. ℥ss. q. b. h. Cold ablutions to be continued.

29*th.* Bowels opened by neutral mixture—better in every respect—her thirst is still urgent. She takes acidulated barley water.

30*th.* Better—skin still a little dry—tongue clammy—pulse quickened—bowels open—fever still high, but decreasing.

31*st.* Is no better to-day—tongue moist, but red—thirst great—skin hot—hearing impaired—no pain in head—a slight pain at epigastrium. No change in the treatment.

August 1*st.* Skin and pulse natural—tongue moist—low diet continued.

2*d.* She still complains of thirst, but her other symptoms are subsiding. A pimply eruption begins to show itself upon her body.

5th. She has continued to improve gradually—costiveness obviated by ʒij. doses of magnesia, or by oil.

8th. Is completely well, but complains much of weakness. Her chicken-water was exchanged for soup. A few roasted potatoes also allowed.

Case VII. *Gastro-Enteritis*—Mary Maran, daughter of Ann Maran, aged six years, was admitted, July 26th, 1827, into the Women's Clinical Medical Ward. She presents the same symptoms as those of her mother, detailed in the foregoing case, but there is greater heat of surface and her abdomen is tumid. Pulse small, quick, and frequent. ℞. Ol. ricini, ʒii.

27th. No change of symptoms—bowels costive. ℞. Sp. Mindereri, ℥iv. Sulph. magnes. ℥ss. m. s. ʒii. q. h.

28th. Medicine purged her. She remains very much the same. Medicine continued.

29th. Fever very high—pain at epigastrium very severe—the breath hot and offensive—teeth and tongue clammy—pulse quick, frequent—is very restless and fretful. Ordered forty leeches to the epigastrium; an injection of cool mucilage; and cold to the surface, particularly to the abdomen and head.

30th. Fever still high—tongue moist—pain in the head last night—bowels open.

31st. Is sleeping—her skin and pulse nearly natural—bowels open once to-day—still complains of pain at belly.

August 1st. Fever but slight—bowels not open since yesterday morning. Ordered a dose of salts.

3d. Her fever completely subsided, but she still complains of pain in the abdomen, which is also much swollen.

6th. Had paroxysm of fever, attributed by Dr. Jackson to too full a diet, which was reduced.

10th. No return of fever—abdomen tense and distended—skin pallid—itching of nostrils. Dr. Jackson ordered the following. ℞. Fol. sennæ, ʒii. Manna opt. ℥i. Sem. chenopod. ʒss. m. Aq. Oj. s. ℥j. pr. re nat.

11th. The medicine purged her actively, was given at distant intervals. There came from her a number of worms of the species trichuris.

15th. Is well.

Case VIII. *Gastro-Enteritis.*—Caroline Maran, aged eighteen, was admitted, July 26th, 1827, into the Women's Clinical Medical Ward. She had landed from Ireland, with her parents and family, whose cases have preceded, three weeks since; was taken sick ten days ago; had

lived in the suburbs of the city. She has pain in the head—dull, heavy aspect—hard, dry, cracked tongue—skin husky and hot—pulse weak and quick—breathing impeded—bowels open. She is quite deaf. Ordered eighty leeches to epigastric region; barley water acidulated to drink; warm fomentations to extremities.

27*th.* Pain of abdomen lessened—no better in other respects. R. Sp. mindereri, ℥viij. Sulph. magnes. ℥iss. m. s. ℥ss. q. b. h. Surface to be well sponged with cold water.

28*th.* Pulse nearly natural—a little excited—skin yet dry, though less so than yesterday—tongue improved, though clammy—bowels opened last night by enema. She seems very dull and inclined to sleep. Treatment continued, but medicine only to be given pro re nata.

29*th.* Is much better—pulse and skin natural—tongue is quite moist—bowels freely opened—appetite returning.

30*th.* Improving—allowed gruel.

31*st.* Convalescent—diet, chicken soup.

August 1*st.* Tongue a little dry—diet decreased.

2*d.* Free from all fever. Her skin is a little dry.

3*d.* She was ordered to have the surface sponged with warm water.

5*th.* A relapse was threatened from some imprudence in diet. A reduction of her diet reinstated her. The deafness has completely subsided. A singular eruption, consisting of red blotches, very harassing from their itching, appeared over the whole of her body. It subsided in a few days without medicine.

September 1*st.* She remains in the ward awaiting the discharge of her father, and her health continues robust.

Observations.—The preceding five cases occurred in the members of one family that had recently arrived via St. Johns, from Ireland. Although living in different places, yet nearly at the same time they were attacked with gastro-enteritic fever, that put on the remittent type. It resembled in its general features the fever by which the Stewarts were affected. This family affords additional evidence that the epidemic gastro-enteritis of the Irish emigrants was the result of change of climate, and a stimulating diet to which they were unaccustomed.

Lawrence Maran, the father, was treated for some days before I saw him, with saline purgatives, and which were not immediately discontinued, as in the foregoing cases. He was also under the use of calomel, ipecac. and opium, until 31st July. Symptoms of debility appearing, with declension of febrile state, solution of sulphas quinine was directed as a tonic. On the 3d of August a diarrhœa commenced, which continued with various intensity until the second week in Sep-

tember. The emaciation became extreme; the pulse was constantly irritable; the skin dry and harsh, except during the period when the sudorific plan of treatment was enforced; and the abdomen retracted and painful on pressure.

The treatment of diarrhœa by sudorifics often proves successful, and was resorted to in L. Maran's case with considerable confidence in its favourable result. These expectations were disappointed, and it was then resolved to trust entirely to a strict regimen, with local depletion and demulcent injections. The functions of the stomach were well performed, and the appetite was good, which occasioned some difficulty in maintaining for so long a period a diet that demanded so much self-denial. The relapses produced by an increase of diet, rendered so obvious the propriety of a severe regimen, it was submited to with cheerfulness, and a complete recovery ensued.

Case IX. *Gastro-Duodenitis.*—Mary Williams, aged forty-five, was admitted into Black Women's Medical Ward, August 17th, 1827. This patient came from a court in the Northern Liberties, whence a few days since three patients had been received into the ward with typhoid fever. They inhabited the same house, which is described as being very filthy, and having a cellar or hole which is very offensive. She was attended by a Dispensary physician, and had taken an emetic which operated very violently. The symptoms on admission are—countenance exhibits a striking expression of indiscribable agony and distress—eyes wild, projecting and rolling rapidly, as if in quest of relief—her mouth open and gasping—tosses her head and hands in every direction—acute pain at epigastric region—tongue dry, cracked, black in the centre—pulse scarcely perceptible—skin cold—she frequently screams aloud—cannot speak—utters inarticulate sounds—has frequent retchings—attempts to bite those around—bites her bed-clothes—had bit the physician who attended her in the arm. Has repeated shudderings, with convulsive movements of the muscles of neck and face; when asked if thirsty nodded assent; when seat of pain and distress was asked her, she pointed to her epigastrium.

Dr. Jackson was present—gave her a few mouthfuls of water, which were immediately rejected, apparently by the action of the stomach alone. Some pieces of ice were put into her mouth, which were crushed and swallowed with voracity. She asks for more by signs, and seems to find relief, chewing them with avidity. Her system appeared too much exhausted to admit of depletion. Ordered iced acidulated gum water, with pounded ice given in spoonfuls every

five or ten minutes. Warm fomentations to limbs. Mucilage injections to open bowels; flying sinapisms.

Reaction occurred in about two hours, when twenty-one leeches were applied to epigastrium. Her pulse rose on the depletion, and from the ice drinks. Skin is warm.

August 18*th.* Seems better this morning—slept some during the night—thirst incessant—her pulse a little better—skin again cold—bowels open last night—did not vomit any—tongue less dry and dark—complains of pain in her head—is now capable of articulating some words. Treatment continued, with warm frictions to the skin.

Night. The symptoms aggravated—some difficulty of respiration, with considerable rigidity of the muscles of the neck and arms. The pain extorts the most horrid screams. Ordered cups to the back of the head. She seems to be relieved very much. From some obstructions in rectum, injections cannot be given.

19*th.* Slept well last night—seems better this morning—pulse and skin natural—tongue very dry and dark—pain in the stomach, but not in the head—rigidity of muscles continues.

Night. Is calmly sleeping—no expression of pain—pulse and skin natural—thirst has not been so urgent. She appears in every respect better, and, to the surprise of all who first saw her, there is some promise of recovery; converses with ease, and gave the history of her illness.

20*th.* Decidedly better—pulse and skin natural—tongue more moist and clean—has no pain at the epigastric region—says she is hungry, and begs for food. Treatment continued. 11 A. M. Suddenly became worse—agony returned—pulse much accelerated—pain at epigastrium. These symptoms continue to increase. Ordered fifty leeches to epigastrium, and twenty to back of head.

5 P. M. She seems for a short time relieved.

Night. Very bad, wild, and frantic—tears and bites every thing about her—pulse becoming more quick and thready. She slept none during the night—continuing violent all the night.

21*st.* At day-light this morning seems a little better, but no hopes of recovery are excited—pulse very much irritated. She frequently screams and asks for something to eat. Ordered blister to back of head and neck. Continues to grow worse during the day.

22*d.* To-day she has spit much blood. The attendants think that it comes from the stomach—her mind perfectly irrational—eyes sunk and dull—pulse languishes—she is disposed to be violent, and coercion is necessary to restrain her actions.

23*d*. Continues to sink, and died during the night.

Post mortem examination, six hours after death. Robust form, no emaciation, thick layer of fat beneath the skin. Heart healthy in every respect; firm coagula in ventricles and auricles. Old pleuritic adhesions of left pleura; left lung natural; right cavity presented the pleura and lung perfectly natural. The liver adhered to the diaphragm and duodenum by old adhesions. Stomach, pancreas and duodenum, amalgamated from former disease. The stomach was contracted, and contained a bloody mucus. Its mucous coat intensely inflamed, particularly along the summits of the rugæ; its colour very bright; vessels injected in portions, with masses of blood effused into its substance. Duodenum red pointed injection. Liver natural. The large and small intestines healthy, containing a considerable portion of healthy fæces. The right ovarium converted into a sac, containing about two gills of clear serous fluid. It was adhering to uterus and rectum, and had occasioned the obstacle to the passage of the injections. About the mouth of the uterus, a bloody mucus.

Observations.—This case, recorded by R. L. Fearn, manifested the symptoms of gastritis in the highest degree. I have never witnessed the physical expression of an agony so intense as was displayed by this patient. Her distress was referred to the stomach. Consciousness was unimpaired when admitted, but all her attention was absorbed by the violence of her sufferings. I was on a visit to the house at the time of her admission, late in the afternoon. Notwithstanding the appearance of extreme prostration—the coldness of the skin, the thread-like, scarcely perceptible pulse—the effects of the gastric agony, not of debility—I immediately instituted the debilitating or antiphlogistic treatment. I gave her a few spoonfuls of water, that had been standing in the ward, which was rejected the instant it touched the surface of the stomach. Ice was then ordered and given in small pieces, and gum-water, acidulated slightly with lemon juice, mixed with pounded ice, was given by table-spoonfuls every five minutes. The retching was instantly allayed. I remained to watch its effects, and in an hour's time a considerable change had occurred; the pulse acquired more volume and force, and the extreme agony was somewhat abated. Having thus felt my way, I directed leeches to the epigastrium, with flying sinapisms to the extremities. Before I left the house, about eight in the evening, the action of the skin had been established, its temperature was increased, and the pulse well developed; she was disposed to sleep.

The improvement was so great under the plan of treatment, that for a short time, some expectations of a recovery were excited. The

sudden change on the 20th for the worse, I was disposed to attribute to some food having been taken by her. She was very clamorous for something to eat, and the ward was so crowded the nurse could not keep a constant watch over all the patients.

Williams in the commencement of her treatment before she entered the infirmary had an emetic given to her. The violence of the gastric inflammation may fairly be attributed to this cause. The other patients from the same house, had also been treated in a similar manner. They each described its effects as most distressing to them. They manifested also gastric irritation, but which was subdued by a treatment similar to that pursued with Williams.

Case X. *Chronic Gastritis.*—Dorry Derric, aged thirty-five, admitted into the Women's Clinical Medical Ward, September 11th, 1827. Habits are intemperate; had fever eight or ten days previous to admission; treatment during this time unknown; complains of pain in epigastrium—incessant nausea and frequent vomitings of green matter—pain in the head—skin hot and dry—tongue furred and dry, red around the edges—pulse contracted and wiry—bowels too open. Ordered flaxseed injection with laudanum; hot pediluvium; cold water to stomach and head; barley water for drink.

12*th.* Bowels opened five times last night—continues to vomit a greenish matter. Ordered leeches to epigastrium.

13*th.* The vomiting ceased immediately after the leeching and fever abated—tongue moist and cleaning—skin moist—pulse full, round, and natural—has no fever—great change for the better, bowels opened but once—has slight hiccough.

14*th.* Tongue moist—skin good—complains of pain in the head—soreness at epigastrium—pulse continues good.

15*th.* Has head-ache—bowels not moved yesterday—no fever this morning.

16*th.* Was restless last night—still has head-ache—bowels opened yesterday.

17*th.* Free from fever—skin, tongue, and pulse are good. Allowed thin chicken soup.

18*th.* Great change for the worse—tongue has become dry—pulse irritated—has soreness over the stomach. Chicken soup discontinued; put on low diet. Ordered leeches to epigastrium.

19*th.* Pain relieved by leeches—complains of great weakness—unable to raise herself in bed—tongue dry in middle, moist around the edges—pulse small and slightly irritated—refuses barley water—drink water and milk, equal parts.

20*th.* Very prostrate—tongue somewhat dry in the middle—rest-

less and delirious at night—pulse full and compressible, and slightly irritated—skin moist—on the whole she seems better than yesterday—a slight twitching observable in her arms—bowels opened yesterday. Evening. Has subsultus tendinum. Ordered thirty leeches behind each ear; blister to back of neck; tongue still disposed to become dry—skin dry—takes weak wine and water—Frictions of sp. terebinth. to lower extremities; cold applications to head. Is delirious.

21*st*. Feels better—skin moist—tongue tolerably moist—no delirium, but still has subsultus tendinum—pulse weaker. Treatment continued. Has strangury from the blister—symptoms of subsultus tendinum less—appears improved.

22*d*. Has no fever to-day—tongue somewhat dry—pulse weak and irritated—is very weak. Frictions of sp. tereb. discontinued.

23*d*. Slept tolerably well—tongue red, clean and moist—has no fever—pulse better, less irritated—appetite good.

24*th*. Light diet—rested well—tongue clean and red—bowels opened last night by an injection—pulse fuller, slow and soft—some slight irritation of stomach.

25*th*. Pulse soft, round, and regular—countenance better—appetite good—tongue moist and red—skin dry and harsh. Ordered vol. liniment. to rub abdomen.

25*th*. No great alteration—feet cold. Ordered hot bricks to feet.

26*th*. Tongue clean and clammy—pulse soft and good—sleeps during day, and restless at night—takes chicken soup.

27*th*. Pulse soft and rather frequent—has no fever.

28*th and* 29*th*. Convalescent. ℞. Extr. opii. gr. j.—calomel, gr. ij. M. ft. pil.—take at night.

October 1*st*. No alteration.

2*d*. Great change. It seems by some neglect that the pill ordered for 28th was given by the nurse every day, since it was first prescribed—skin has a pale straw-colour—disposition to sleep—skin cold, moist, and cadaverous—pulse very weak—great rigidity of muscles—refuses chicken soup—bowels opened yesterday—very prostrate—ordered ℞. Carb. ammon. ʒij.—mucilage, ℥ij.—sac. alb. ℥j.—aq. menth. ℥ij.—aq. cinnam. ℥iij. M. ℥ss. q. h. gtt. v. of acet. opii. to each dose; head to be shaved, and mustard plaster applied over it; sinapisms to inside of thighs, afterwards blisters to the thighs and arms; brandy toddy freely. She gradually sank and died in the evening.

Dissection twelve hours after death.—Body emaciated one-half; of light straw-colour—no effusion in cellular tissue.

Head. Arachnoid membrane on cerebral surface opal colour—a

slight serous effusion between it and pia mater—ventricles contained ℥ss. serous fluid—brain natural.

Thorax. The viscera of this cavity appeared perfectly natural—the heart contained very little blood, which was thin and watery, without coagula.

Abdomen. Peritoneum healthy, no effusion—liver natural—spleen distended—stomach large, very much relaxed or flaccid, no external marks—mucous membrane, at cardiac extremity of a dirt-brown colour, very thin, no appearance of villi, and nearly diffluent. I have frequently seen the mucus secreted of more tenacity—it yielded to the nail or handle of scalpel with facility—in pyloric extremity it was firmer, but less than half its usual thickness—had red pointed injection—duodenum dirty-ash colour—follicles enlarged—intestines natural.—Case recorded by Mr. Kennedy.

Observations.—Derric, on admission, was suffering under gastric irritation of a high degree, evidenced by the incessant nausea, retching, vomiting, pain of epigastrium, thirst, and fever. These symptoms speedily yielded to the application of leeches to the epigastric region. The irritation had, however, been irradiated on the cerebral membranes; hence the subsultus tendinum.

The absence of all febrile symptoms for several days, led to a belief that a recovery would ensue. It was soon observed, notwithstanding the apparent convalescence, that the food she consumed did not nourish her. Her skin gradually became bombycinous or of a waxy appearance, and husky to the feel. She became listless and indifferent, with light stupor.

The dissection exhibited the partial disorganization or death of the mucous membrane of the stomach, and slight affection of arachnoid membrane. It does not appear to me that her death is to be attributed to this last cause, but rather to the condition of the mucous membrane of the stomach. Healthy, natural digestion could not be performed; assimilation was suspended; the blood, from the absence of fibrin, and impoverishment of its globules, had its stimulant powers impaired, and the actions of the organs in consequence irreparably prostrated.

Acute inflammation supervened most probably to chronic phlogosis of the gastric mucous membrane, which had existed from her intemperate habits. When this event takes place, destruction of the organ in which it occurs very easily is produced. Hence arises the frequency of the disorganizing and fatal effects of inflammation in the intemperate, and the difficulty of treating their acute diseases.

Case XI. *Intermittent Fever—Intermittent Gastro-Meningitis.*—George Lee, aged seventeen years, was admitted into the Men's Me-

dical Ward, September 6th. One week before was taken with pain in the head and back. Three days after had a severe chill followed by fever, both of which came on regularly every day about 9½ o'clock. Habits temperate.

Symptoms on admission; face flushed—eyes rolling, very red and watery—tongue much furred and dry, fissured transversely—pulse frequent and irritated—skin very hot, and parched—little or no tenderness on pressure at epigastrium—some stupor—ordered cups to back of the neck—cold cloths to the forehead—hot pediluvium, and cold enemata—barley water acidulated, allowed as drink. ℞. Tinct. opii. gtt. xxx. when chill is expected to-morrow.

9*th.* Paroxysm to-day—fever less intense—bowels well opened—less distress of head—thirst excessive—extremities cold and livid—circulation of skin languid—pulse irritated. Ordered hot blankets to lower extremities; cups to epigastrium, and cold to head.

10*th.* Paroxysm this morning—skin hot—pulse quick, small, irritated—tongue dry and dark, thickly furred—sordes on teeth—lips dry—eyes less watery and red. Ordered cups to be repeated; cold water to be allowed ad libitum; diet absolute.

11*th.* Much better—free from fever—skin cool—tongue cleaning on edges—white streak of loose fur on each side—eyes becoming jaundiced—skin yellowish. ℞. Oil to regulate bowels.

13*th.* Has been improving for several days—had a slight chill to day, which was checked by laudanum—is now free from fever—tongue cleaning rapidly, but rather red—papillæ elevated—skin cool and perspirable—eyes still yellow—bowels open. Ordered enemata pro re nata; fomentations to abdomen.

15*th.* A chill succeeded by fever to-day, with general distress—is very fretful—much thirst—respiration rather laborious—when the fever goes off, appears quite lively, and walks about. ℞. Hot pediluvium, with mustard; cold fomentations to abdomen, and cold enemata.

16*th.* Had the chill as usual this morning—has now some fever, but less than usual. Treatment continued.

17*th.* Some tenderness on pressing epigastrium—otherwise as usual. Ordered cups to epigastrium.

19*th.* Chill—has now fever—pulse full and rather tense. V. S. ℥vi. Treatment continued.

20*th.* Every day the chill and fever are delayed to a later hour. Diet restricted.

25*th.* Chill lessened in duration—has no fever. Diet, soup and

milk. R. Sulph. quinine, gr. xij. Sulph. acid. q. s. Aq. puræ, ℥vj. M. ℥ss. q. b. h.

30th. Convalescent. No chill or fever. Diet increased—soup, milk, sago, &c.

Observations.—The intermittent type was assumed in this case, yet the organic lesions were evidently high gastric irritation, which, on his admission, had been irradiated to the cerebral meninges.

In its essential characters, the disease of Lee was similar to remittent fever; and from the jaundiced state of the eyes and skin, that appeared on the 11th, the irritation was communicated to the biliary ducts, giving it a disposition towards bilious fever, as it is termed. The type the irritations assumed, was not attended to in the commencement. The treatment was directed to the organs affected, and the condition in which they existed when the organic irritations were controlled, and the febrile paroxysms subdued, the sulphas quinæ was resorted to, and secured the patient from a recurrence of the paroxysms.

Case XII. *Typhus Fever—Gastro-Meningitis.*—William Lynch, aged forty-five, pedlar, was admitted into the Men's Medical Ward, Sept. 26th. In August had attack of fever while peddling along the Schuylkill—became better after two weeks confinement—attempted to return home, and was compelled to lay by at a tavern on Lancaster road—was sick six or eight days, and was attended by a physician of the neighbourhood. Got somewhat better and came on to the city. Becoming worse, entered the infirmary. Has lost one eye from an injury; the other has been much affected. Is a free drinker. Symptoms on admission; much general debility—pulse small and feeble—skin dry and parched—eye much injected and watery—some stupor—answers questions reluctantly—tongue very tremulous, white, and furred, but broad and moist—bowels open. R. Ammoniated julep, ℥ss. q. b. h. Wine whey in intervals.

27th. Sinking—debility greater—pulse weak and frequent—stupor increased. Blister to nape of neck.

Night. Eye very red and injected—much head-ache. Cold water to head; sinapisms to extremities.

28th. No better—pulse rather fuller. Ordered brandy punch; porter and water; soup and sago as diet. Other treatment continued.

Night. Cerebral symptoms increasing—comatose—seldom speaks, unless spoken to—voice very indistinct—skin rather moist. Blister to head.

29th. Has retention of urine—otherwise same as before. R. Sp.

nit. dulc. ℥j. in flaxseed tea, q. ½h. Carb. ammon. discontinued, and punch.

30th. Leeches applied behind the ears—slight change for the better—speaks more willingly—opens his eyes—pulse risen somewhat—skin dry and harsh. ℞. Calomel, gr. ss.—ipecac. gr. ¼—opii, gr. ¼. M. ft. pil. q. b. h.; wine whey continued.

October 2d. Perspiring freely—feels better—pulse soft, full, and regular—bowels in good condition—tongue moist and cleaning—eyes less red. ℞. Cort. cinchon. ℥j.—Serpentaria, ℥ss. M.—one pint of boiling water—wine-glassful, q. b. h.

3d. Improving. Says he is quite another man—pulse soft, full and regular—perspires rather profusely—coming on always after taking wine whey, which is now used sparingly. Treatment continued.

4th. Doing well—tongue cleaning rapidly, moist, soft, and elastic to the touch—gums slightly touched—skin moist and soft—eye clearer. Milk and gruel in the morning, and soup during the day. Uses gargle of sage tea, borax, and honey, p. r. n.

5th. Quite cheerful—gums quite sore—discharge from them increased. Gargle of solut. borax and myrrh.

7th. Doing well—diet increased.

23d. Convalescent.

Observations.—Lynch has been an invalid for some years, and was, on his admission, in what might be considered the last period of the fever, with which he had been attacked on the Schuylkill. The symptoms that presented themselves at that time were of opposite character, and demanded a contradictory treatment. The central organ and the forces of the circulation were in a state of debility and apparently failing. Stimuli of an active nature were required to maintain their powers—at the same time symptoms indicative of meningeal inflammation were present. On the 29th, when the vigour of the circulation had been restored, but with increase of the cerebral symptoms, twelve leeches were applied behind each ear, and all the stimulants except wine whey were withdrawn—an immediate amendment ensued. The prescription of the 30th was ordered with a view to excite perspiration. This effect was induced, and, subsequently, a slight ptyalism was brought on. No gastric distress was manifested by Lynch.

Case XIII.—*Gastro-Entero-Cerebro Colitis.*—Mary Ann Ketler, aged ten years, was admitted into the Women's Medical Clinical Ward, Aug. 22d, 1827. Person delicate—temperament nervoso-sanguine—

complexion fair—hair light colour—eyes blue—has been sick three or four weeks. The physician under whose care she had been, gave the following account of her disease and treatment. The fever, at first intermittent, became continued. An emetic, followed by several active purgatives was prescribed. A cerebral affection supervened, attended with derangement of mind, entire loss of sight and hearing, great stiffness of the cervical muscles, &c. To meet these symptoms, a blister was applied to the head, and repeated. The fever subsided, and a prostration supervened. The sulphate of quinine, carb. ammon. and wine were given, and continued for four or five days, when fever recurred. Since which she has been using pulv. Doveri and acetat. opii, gtt. ij. q. b. h. to quiet irritation.

Symptoms on admission.—Emaciation considerable—delirium incessant—screams violently, from pain—pulse irritated, frequent—skin hot—tongue pointed, red on edges, white fur on surface, dry—abdomen depressed, renitent, painful, when pressed, in every part, especially epigastrium and iliac regions—face flushed, particularly the cheeks. Latterly gangrenous spots and petechiæ have appeared. She also has a large sloughing ulcer over the sacrum. When not screaming, lies moaning—has colliquative diarrhœa. Ordered injections of laudanum and mucilage, pro re nata, and fomentations to abdomen; barley water, acidulated, for drink, and arrow-root mucilage for diet.

23*d*. Delirious all night—talking and screaming incessantly. The patients in the ward were so much disturbed by her, she was removed to a separate room. The diarrhœa appeared checked by the injections. Bowels opened this morning after an injection—stool dark and thick—symptoms as yesterday—more heat of surface. Ordered twenty leeches to epigastrium and twenty to back of head; cloths dipped in cold water to head and epigastrium; mucilaginous injections, cold. A circular perforated pad to sore on sacrum.

24*th*. Raved last night till one A. M.—much thirst during night—had a dark stool this morning—tongue rather cleaning—lips and gums very dry—pulse very small, quick, and frequent—low muttering delirium, with much peevishness—skin cold and damp—small blue spots over body. Ordered warmth by fomentations and bricks. Afternoon.—Reaction taking place—skin of natural temperature—more quiet—pulse less irritated. Night.—Some exacerbation of fever, but she is more rational—has had a copious dark stool. Ordered twenty leeches to epigastrium.

25*th*. Seems better this morning—passed a tolerably good night—

skin natural—tongue cleaning—bowels open—her pulse still irritated and corded. Treatment continued. Night.—Much better—reposes quietly, and is rational—no fever—pulse the same.

26*th.* Rested badly last of night—better this morning, quite rational—the nurse was induced by her entreaties to give her a small piece of light bread to eat—she complains much of hunger—tenderness at epigastrium lessened—bowels open, stools not so dark—the pupil of eye has become natural. Treatment continued. Night.—Pulse improved—stools nearly natural—allowed a few spoonfuls of sago.

27*th.* Very restless, fretful, impatient, was delirious in the night—pupil again dilated—pain in head and epigastrium—tongue and pulse improving—sore on sacrum looks clean and healing under the bread and milk poultice—petechia have disappeared—her shoulder pains her very much—the muscles of abdomen very tense, she lies with her legs drawn up to relax the abdominal pressure—has no great thirst. Ordered twenty leeches along longitudinal sinus. Night. Warm fomentations to abdomen—is calmly sleeping—bowels not open to-day—drinks chicken water.

28*th.* Rested badly—bowels open last night—pulse small and tense—pupil still dilated—does not complain of her head—tongue rather dry—sores have healthy appearance. Ordered new milk and water. Night. Has passed a bad day—frets much, and complains of her head—gastric uneasiness decreased—bowels not opened. ℞. Calomel, grs. iv.—ol. ricini, ʒij.

29*th.* Had a better night—sleeps calmly this morning—bowels open—stools natural—pulse improved—likes her milk and water.

30*th.* Rested well—pulse and skin favourable—still moans and complains of pain in her abdomen. Ordered emollient injections through the day, and an anodyne injection at night; treatment and diet as usual. Night.—Pretty quiet. A small portion of bread and butter allowed, as her incessant craving for it seemed to irritate her—bowels natural.

31*st.* Rested well—legs drawn up to relieve tension of abdomen—pupil still dilated—tongue and pulse good—eats with appetite—stools natural in colour, but offensive. Ordered blisters to back of ears. Night.—Blisters drew well—pupils of eye natural—has ceased to moan—doing very well.

September 1*st.* Rested well—pupil again dilated. Night.—No change in treatment—very fretful during afternoon—more calm at night, and disposed to sleep.

2*d.* Slept but little—is rational, but peevish—her stool this morning contained a portion of blood—pupil less expanded—tongue has

become moist, clean, and natural—pulse natural—appetite good. Night.—Another stool, but no blood with it—her fever high—the bread, butter, and milk are stopped. Ordered lemonade.

3*d*. Symptoms very favourable—pulse, skin and pupil of eye natural—diet allowed again. Afternoon.—She was this day removed back again to the clinical ward—her pulse became excited, and considerable fever was manifested—diet again stopped—body sponged with cool water—fever abated towards night.

4*th*. Not so well to-day—bowels too loose—stools are dark and offensive. Ordered twelve leeches to the iliac region, and six to margin of anus. ℞. ʒi. of oil. Opiate injections. Seems a little better.

5*th*. Better this morning—rested well—tongue, pulse, and pupil natural—had a slimy passage during the night—takes milk for diet. Ordered cold injections of mucilage with laudanum.

6*th*. Rested badly—she seems under the effect of the opiates—has had frequent bloody and mucous stools. Pulse failing. Ordered weak wine whey. Opiate injection continued.

10*th*. After the sixth instant she gradually declined—suffered severe pain—abdomen excessively tender—her pulse became weak, irritated, frequent, and quick—her skin hot—colliquative diarrhœa with bloody discharges—frequent vomitings. This day she died. —Case recorded by Mr. HALL.

Abdomen only examined.—Autopsis eight hours after death—much emaciation—abdomen retracted—superficial veins very visible. Peritoneum healthy in every portion. Stomach—mucous membrane of natural consistency—colour white—contained a large quantity of fluid—her drink. Duodenum and jejunum presented a healthy structure and aspect. Liver and kidneys of natural appearance. The ilium, as it approached the colon, was inflamed, and exhibited numerous laminæ of various sizes, mostly oval-shaped, elevated a line above the surface, many of them ulcerated, especially in the proximity of the cœcum; edges of the ulcers ragged; contents of ilium were a blackish mucus. The mucous coat of colon and rectum were covered over with a bloody mucus, the sanguine appearance increased in descending; in the ascending colon and arch the mucous tissue not red, but of deep red in the lower portion and rectum. When washed it was found to be riddled like a sieve with perforations, and extensively pitted. The perforations penetrated only through the mucous tunic, the others were unaffected.

Observations.—The symptoms manifested by this patient on admission, and the duration of the disease, which had constantly progressed

in its unfavourable tendency, precluded almost every expectation of affording even a relief to her sufferings, much less a recovery. From the intensity of the cerebral symptoms, I apprehended, at first, the immediate danger to be disorganization of the cerebral structure. It is to be observed that no spasmodic contractions, no rigidity of the muscles, the concomitants of meningeal inflammation at the base of the brain existed; neither was the adnata injected, nor the eye affected in its movements—rolling in its socket, and turned upwards, as occurs from the same cause. No tendency to stupor was at any time observable; on the contrary, the mental faculties were too active—wakefulness was a troublesome symptom—delirium was acute, accompanied with talkativeness. From these symptoms, I concluded the sympathetic irritation, was not developed on the meninges, so much as the anterior lobes of the brain, or at least, if they were involved, it was only the arachnoid and pia mater, covering the superior portion of the anterior lobes of the cerebrum.

All apprehensions from this source were soon dissipated from the mitigation so speedily induced in the cerebral symptoms, by the discontinuance of the stimulants and narcotics, and the adoption of the physiological treatment directed to the organs affected. As the cerebral disorders moderated, it became evident, that danger equally formidable, though more remote, threatened our patient from the phlogosis existing in the alimentary canal. As far as the stomach was concerned, our fears were soon allayed. The tongue became moist, clean, and lost its pointed shape and scarlet hue. The appetite returned, was even sharp, and digestion good. The renitent state of the abdomen, which was sunk in and depressed; its extreme sensitiveness to pressure in the iliac regions, and track of the colon; the diarrhœa that existed on admission, and which continued to recur at intervals; the legs drawn up to relieve the abdominal contents from muscular pressure; the progressive emaciation notwithstanding the restored state of the digestive functions; the persistance of an irritated pulse, and a husky skin, indicated, too plainly to be misunderstood, an extensive and aggravated intestinal inflammation, (entero-colitis.)

In observing on this case to the class, I remarked in the commencement of the treatment, that inflammations of so many organs, of such extent and continuance, could not be eradicated at once, as in recent cases, by active depletion—the general forces of the patient requiring to be managed—but that the different active phlegmasiæ, then existing, were to be reduced, by local and appropriate means, below the point of immediate disorganization; that they were to be converted

into chronic inflammation, which might be removed by regimen and revulsives; and that such would be the object I proposed in the treatment.

For a few days the melioration of the condition of the patient, almost led to a hope, that such a result would be accomplished—it was soon abandoned, and instructed by frequent autopsical researches, when similar abdominal symptoms have existed, I announced ulceration of the ilium and colon to have taken place.

In this case, displaying a formidable train of morbid phenomena, the decided, unequivocal impressions made by the physiological system of treatment, are too obvious to be denied. This patient, under a different system, had proceeded from bad to worse; and the first appearance of amendment or check to any of the symptoms, in a period of three weeks, was immediately consequent on the institution of local and general debilitants of irritative actions. They are too well connected to be considered as mere accidental concomitants, and have the connexion of cause and effect. Had the same plan been adopted in the commencement of the disease, when, in so many instances, it is alone susceptible of cure, a very different fate, it is fair to presume, would have awaited this unfortunate little girl.

A circumstance in this case requires to be noticed. While treated by stimulants and Dover's powder, petechiæ appeared on the surface, and sloughing on the sacrum. These are supposed to be signs of debility and a putrid tendency, and to require tonics and stimulants. But soon after the antiphlogistic system, the local depletion, demulcents, regimen, &c. was commenced, the petechiæ disappeared, the sloughing ceased, the ulceration assumed a healthy aspect and began to heal.

The brain was not examined, in consequence of a difficulty having been made to open the body. I was determined to verify the condition of the abdominal viscera, and removed them entire. I never before met with the kind of ulcers that existed in this colon. There were many thousands, none larger than small shot-holes, and appeared to be formed by the destruction of the mucous follicles that are disseminated in the colon. In the ileum where the follicles are agglomerated together, they formed, as they usually do when enlarged by inflammation, circumscribed laminæ elevated but flattened on the surface. Those near the ileo-cœcal valve were ulcerated; ascending up the ileum, the ulcerations disappeared, and, finally, the lamina. The structure of the stomach corresponded with the symptoms that announced its restoration to its healthy functions; it was perfectly natural.

Case XIV. *Gastro-Entero Colitis.*—Christian Deelar or Teilher, aged thirty-two, a German, fair complexion, light hair and eyes; a labourer in a brick-yard; admitted into Men's Medical Ward, August 31st, 1827. He has not been in good health for some time past, but was confined to bed only four days previous to his entrance into the infirmary.

Symptoms on admission, were fever—head-ache—flushed face—short and laboured respiration—tongue foul—bad taste and clamminess of mouth—thirst—pain in abdomen—diarrhœa.

Treatment.—V. S. ℥vi.; cold applications to head; cold mucilaginous injections; barley water acidulated, for drink.

September 1*st.* Fever—pulse active—respiration hurried—abdomen sore to pressure—bowels very loose. Treatment.—Cups to abdomen—V. S. ℥vi.—fomentations to abdomen; cold applications to head

2*d.* Bowels continued loose in the night; are in better order to-day—pulse frequent and irritated—respiration short and hurried—pain in head.

Treatment.—Cups to head; continue injections and cold applications.

3*d.* Pulse more excited—bowels again very loose.

Treatment.—Thirty leeches to epigastrium, ten to margin of anus; fomentations to abdomen and cold injections continued; feels much better after leeching.

4*th.* Apyrexia—appetite, asks for food—diarrhœa checked—complains of dimness of sight and dizziness of head.

5*th.* Was somewhat delirious in the night—no fever—asks for food and allowed some gruel—was easy, and appeared doing well during the day—respiration continued short.

10 P. M. Was suddenly seized with violent pain in lower part of the abdomen; his outcries disturbed the whole ward. He attributed his suffering to suppression of urine. Anodyne injection and warm fomentations to abdomen. An attempt to pass a catheter failed; he was put into a warm bath, after which the instrument passed with facility. Not more than a gill of urine was obtained. He felt somewhat relieved, and near midnight got some sleep.

6*th.* Pain returned with great severity early this morning, and increased rapidly. At 8 he is quite prostrated—extremities cold—pulse barely perceptible—respiration laborious—stimulants external and internal were freely administered, but without effect—he expired at 9 o'clock. Case recorded by Mr. Betner.

Autopsy.—Thorax and abdomen examined. The pleuræ, lungs,

bronchiæ, and heart, exhibited a perfectly natural condition. In abdomen the peritoneum was extensively inflamed, which was most intense in the lower portion; that spread over the stomach, liver, and spleen was not affected. The convolutions of the intestines, where they were in contact with the parietes, so that the two peritoneal surfaces were in apposition, presented a high degree of inflammation. In the cavity was a yellow fluid, in which was intermixed fæcal matter. The liver perfectly healthy; the mucous coat of stomach natural thickness and consistency, of a dull white colour; duodenum similar, and jejunum also; they contained a yellowish, thick, semi-fluid matter, the colour derived from the bile; descending along the track of the small intestines, about their middle, capillary, arborescent injection began to appear, and the contents were a thin and bloody mucus. Further on laminæ were met with; they were elevated above the surface, of an oval shape, granular to the feel, of a pink colour, and offered considerable resistance to the scalpel. Proceeding on, these laminæ or plates were more numerous, and of larger size; some were an inch and an half to two inches in length, and from a fourth to half an inch in width. The mucous tunic was of deep port red, and mucus contained in this part highly sanguineous. Six inches above the ileo-cœcal valve, the laminæ had ulcerated—some were in a gangrenous state, soft and black, with ragged edges. One had perforated the intestine completely. From this to the cœcum, all the laminæ were in a similar state, and three other perforations had taken place. The ileo-cœcal valve, with the whole mucous coat above it, was black, disorganized, in fact putridinous. The colon through its whole course was intensely inflamed and exceedingly rugged and thickened. It contained bloody mucus. The cœcum, part of ascending colon, the lower portion of descending colon, and rectum, were covered over with ulcerations of various sizes, but none of them gangrenous.

Observations.—Teilher did not give an explicit account of his previous condition, except that his health had not been good for some time anterior to his present confinement to bed. It is most probable from the extensive morbid condition of the colon and ilium, he had been affected with chronic ilio-colitis, on which supervened acute inflammation.

The general symptoms on admission were those that usually characterise remittent fever; but on the subsidence of the gastric irritation, and the return of appetite, the febrile symptoms disappeared, and an apparent amendment ensued. The same circumstance was noticed in the preceding case, (Mary Ann Ketler,) and I have repeatedly observed it in similar cases. It arises from the less active sympathy be-

tween the heart and the mucous tunic of the small and large intestines, than between the heart and the mucous tunic of the stomach. As soon as the gastric irritation is controlled, the sympathetic irritation of the heart ceases, and *the symptom called fever*, disappears from the train of morbid phenomena. Notwithstanding the absence of this symptom, disorganizing inflammation may continue in a large extent of the ilium and colon, and the condition of the patient is not the less critical, though apparently improved. These facts give support to the principle of Broussais, that the symptom of fever does not occur in disease, without the previous development of irritation on the gastric mucous membrane.

The perforation of the bowels in this case, was the result of the ulcerative process and gangrene combined. The escape of the intestinal contents into the peritoneal sac produced its inflammation, that became the immediate cause of death. Perforation of the intestines ensues sometimes in a totally different manner; it is independent of ulceration or gangrene, but is a softening of the structure. It is a vice of nutrition, in which the atomic or molecular forces that govern the combination of the animal elements, appear to cease or be perverted, and a discontinuity of parts succeed. This kind of perforation is often seen in the stomach, and is more frequent in children than adults.

Case XV. *Cerebro-Hepatic Congestion.*—John Wilson or Nelson, admitted into the Men's Medical Clinical Ward, October 1st, 1827, aged sixteen years, light complexion and hair, addicted to intemperate use of ardent liquors.

This patient was brought to the house in a wagon, by an innkeeper residing on the Schuylkill, who mentioned that two days previous he had found this lad early in the morning lying on the steps, in front of the house, where he had lain all night. Finding him to continue very ill, he had brought him into the infirmary.

From the patient the information collected was, that he had been complaining and unwell for two weeks, that he had come down the Schuylkill from Mount Carbon in a coal boat, in which he was exposed night and day to the weather, and that he was in the habit of drinking from two to three pints of whiskey per diem.

Symptoms at the time of admission were complete torpor of mind and body—skin pale and cold—bluish hue around mouth and neck, from the stagnation of the circulation and settling of the blood—respiration feeble—pulse barely perceptible—pupil of the eye contracted to a small point. The most powerful and diffusible stimulation internal and external was immediately put in requisition, as hot brandy

and carbon. ammon.; warm bricks to different parts of the body; frictions with hot ol. terebinth.; sinapisms, &c.

In the course of three or four hours reaction was awakened—the pulse rose—the skin became warmer, and he could be roused from his stupour for a short period—when the preceding statement was obtained from him—head was shaved, and four cups applied, followed by a sinapism—the reaction became considerable during the day, but in the night he suddenly sunk and expired.

Examination next day, twelve hours after death.—Body not emaciated, skin of pale straw-colour—no discoloration from settling of blood—face bloated—no rigidity of muscles—limbs round, well formed—chest large.

Head.—Vessels of scalp turgid with blood, from which half a pint escaped and was collected. When the skull-cap and dura mater were removed, the brain appeared through the arachnoid of purple ash-colour. The arachnoid was of a faint opal white—no effusion of serous fluid existed in the arachnoid or beneath it—the vessels of the pia mater loaded with blood—the exterior of the cortical substance was of a *deep purple colour*, which seen through the arachnoid had appeared of an ash tinge. The interior of the cortical substance was of a hue approaching a *dark mahogany*. An alteration of the colour was observable after exposure to the air for a short time—it assumed a lighter tinge, and was more bordering on red. This effect was doubtless produced by the action of the air on the blood in the congested capillaries.

The white medullary substance had a faint rose tinge, with numerous red points from divided vessels. The cortical or grey substance of the interior in the corpora striata, and thalami, was similar in colour to the external—choroid plexus deep red.

When the cerebellum was divided, the grey or cortical substance of the arbor vitæ, projected the extent of a line to a line and a half beyond the medullary, as though it was compressed, and had the same deep mahogany colour as that of the cerebrum.

The ventricles contained only ʒii. or ʒiii. of reddish serous fluid; the substance of the brain generally was firmer than usual.

Thorax.—Heart natural size and density—right auricle and ventricle distended with blood, but not as much as is often met with. The lungs healthy, crepitating, natural colour—collapsed when the thorax was opened—settling of blood at posterior portion.

Abdomen.—Peritoneum healthy—liver large—structure natural, colour deep purple; blood followed the scalpel in a stream, wherever an incision was made. A portion washed in water for a few minutes

by the escape of the blood had its hue lessened and a yellow tinge was perceptible. Spleen very large and solid—weighed from seven to eight pounds. Mucous coat of stomach natural thickness and consistency—had brown hue, with slight redness—that of intestines was quite natural.

Observations.—This case from its symptoms and the autopsical examination, appears to me to illustrate very finely, a morbid state of congestion independent of inflammation; a condition of the organs, respecting which much is said and written, but of which I have met with very few examples.

Wilson, on his admission, was in a complete torpor, or adynamic state. All the vital energies were in collapse. The muscles were relaxed; in whatever position the limbs were placed in, that they remained. There was no starting of the tendons, not a sign to indicate irritation of the motorial nervous power. The respiration was not laboured or hurried, but calm and feeble, a direct proof that the nervous respiratory apparatus was not acting in excess. The intellectual faculties were dull, almost to complete torpidity. It was with great difficulty, we could rouse him to a few moments of attention, from which he immediately relapsed into his previous stupor. All the functions of animal life were prostrated.

The functions of organic life were equally depressed. The circulation, general and capillary, was feeble, and animal heat reduced. They were, however, capable of being roused by stimulation, though their actions could not be long sustained.

The morbid condition of the organs corresponded to the morbid phenomena that were exhibited. In the cerebrum, the cerebellum, and the medulla oblongata—the principal organs of animal life—a congestion of sanguine capillaries existed to a degree I have never before witnessed. I exhibited, a few hours after the examination, to my friend Dr. Horner, whose familiarity with the human structure, both natural and morbid, is generally acknowledged, a portion of the brain, on account of the peculiar appearance of its cortical substance. It was the first instance of the kind he had met with. The absence of effusion from the arachnoid or any marked change in the texture of the brain, are strong evidences that inflammation had not previously existed.

What is remarkable in this case is, that the lungs, the most vascular of all the organs, were exempted from congestion, while it existed in an intense degree in the nervous system, the liver and spleen. This circumstance is to be accounted for by the excessively intempe-

rate habits of this lad, and illustrates an important pathological principle. The brain, the stomach and liver, are the organs that especially experience the stimulation of alcoholic liquors. In Wilson they were, from this cause, in a state of prolonged or chronic irritation, and the most irritable of his organs. When, from the impression of cold on his surface, or from other causes, the blood abandoned the exterior capillaries, and was thrown into the interior, it was attracted, as it always is, under such circumstances, to the organs in greatest activity of organic action, or in a state of irritation. That the mucous tissue of the stomach, did not exhibit a higher degree of congestion, may have been occasioned by the excessive engorgement of the spleen and liver, which proved diverticula to the circulation of those organs. Had the bronchial mucous membrane or the sanguine capillaries of the parenchyma been the seat of chronic irritation from previous catarrh, or pneumonia, instead of the brain, liver and spleen, the pulmonary apparatus would have been the seat of the congestion, and hæmorrhage, or pulmonary apoplexy, or acute inflammation might have been the result.

In this manner the state of the organs from habits, professions, previous diseases, &c. modify the effects of the same agent on different individuals, and give rise to very different morbid phenomena. The fluids are uniformly attracted or determined to the organs whose actions are habitually excited, or are in a state of irritation, and hence result congestions, hæmorrhages, effusions, inflammations, &c.

Case XVI. *Colica Pictonum.*—David Graham, aged thirty, lead-beater, was admitted into Men's Medical Ward, October 8th, 1827. His habits were temperate; he had been engaged some time at Wetherill's factory in preparing white lead, and other matters relative to that business. Had been affected with violent colicky pains and constipation, for which he had been salivated, and for a few days was relieved; on 4th inst. relapsed, and was seized with much pain in the region of the stomach, and afterwards in the pubic and umbilical regions. The pain was sharp and lancinating, with a sensation of twisting about the navel; bowels had been very much constipated, and he suffered much pain when he tried to evacuate them. He has been under medical treatment, and was a second time placed under the mercurial treatment, purged freely, and blistered over the abdomen.

Symptoms on admission. Gums tender—breath mercurialized—periodical spasms of bowels, which are much constipated—tongue slightly furred and white—he has perfect use of his limbs—pulse full and active—skin moist and soft. Ordered ℞. ol. ricini ℥ss. twice daily; twenty-five leeches applied to anus; enema of senna tea.

9th. Has pain in side and epigastric region. Ordered cups freely to side, &c.—oil continued.

10th. Pain in bowels greatly relieved—freely moved—has little or no pain. Treatment continued. Prescribed light, mild, nutritious diet, as thin soup, milk, &c.

Afternoon. Occasionally has pretty severe pain—pulse rather full and tense—skin dry. V. S. ℥viij.

15th. Continues in convalescent state—bowels regular. Treatment continued.

20th. Suffers little or no pain—bowels open—discharged cured.

Observations.—This case, recorded by F. Horner, senior student, was one of colica pictonum, less violent than most of those usually brought into the infirmary. Though not a very aggravated form of the disease, the mercurial treatment, and salivation, twice induced, failed to accomplish a cure.

Colica pictonum presents two groups of symptoms wholly dissimilar—the one is connected with irritation of the gastro-intestinal mucous membrane; the other rally round an irritation of the apparatus of the nervous organs. This irritation is, most probably, for positive data are wanting to verify the fact, primarily seated in the ganglionic system, but very often extends to the motorial nervous organs—as is evinced in the spasmodic contractions of the voluntary muscles that are sometimes seen, as well as the spasms of the involuntary muscles, and the paralysis so frequently sequent to it. According as the one or the other irritation is most predominant, the symptoms vary, and a modification of the treatment is demanded. In Graham, the order of nervous symptoms was not very obvious. None existed in the apparatus of the voluntary movements. The local depletion by cups to the abdomen, and leeches to anus, with restricted diet, had a most prompt effect in abating the symptoms. Previous to his discharge he had been walking about the ward for some days, without any appearance of a return of the disease.

A severe case of colica pictonum was brought into the infirmary last winter, which was witnessed by the clinical class. The period of the disease was advanced, and the intestinal disorder was abated. The nervous morbid phenomena were predominant. Pain in the back and shoulders, and in the extremities was excruciating, and the lower extremities were in a state of incomplete paralysis. He was unable to sustain himself on his feet. In this case the efficacy of local depletion was most strikingly manifested. He was cupped along the spine, which, in a short time, completely removed the pain, and restored the power of the muscles of the lower extremities. Pain and ina-

bility of motion remained in the superior extremities. It was so excessive in the left arm, the patient declared he would consent to have it cut off. Mr. Ashmead, the senior student of the ward, finding the cups had relieved the pain in the back so effectually, applied them along the arm; an immediate relief was procured, and by a persistance in a regimen, with reiterated local depletions, the whole of the morbid nervous phenomena disappeared, and he was discharged cured.

Case XVII. *Gastro-entero-colitis.*—Metfield, a black, admitted into Black Men's Medical Ward, September 21st, a labourer, habits intemperate, frame athletic. He had been attacked, eight or ten days previous, he said, with chills, had been sick at stomach, and had fever. He appeared exceedingly dull in intellect. At the period of his admission he had no fever, and made no particular complaint—the adnata slightly yellow. On the 23d, in the evening, Mr. Horner, senior student, found him sitting up; he wished to have a purge of calomel and jalap, but as his bowels were open, it was refused him. Early on morning of 24th, he had epistaxis; at eight o'clock went to the close stool, returned to his bed, and in a few minutes expired, without a groan or struggle.

Examined twelve hours after death. Body—no emaciation; head not opened; the white tissues were coloured yellow; thorax—lungs, and pleuræ natural, except some old adhesions; heart natural size; left cavities distended with blood, contained soft coagula; lining membrane spotted red.

Abdomen.—Liver natural—gall-bladder small, contained chiefly mucus coloured with bile. Stomach—no exterior marks; mucous coat morbidly thickened and hardened, gritted under the scalpel, was covered with tenacious, viscid mucosity, which, when scraped off, was bloody; the contents of the stomach were a bloody serous fluid: the follicles or mucous cryptæ of the mucous tunic of the stomach were enlarged, of a bright red, and studded its surface in small projections, resembling the papillæ of an inflamed tongue; the colour of the membrane violet.

The follicles throughout the small intestines were in a similar state. The jejunum contained a considerable quantity of thin brownish-green mucus. When removed from the mucous membrane, this was found injected with blood, of a violet colour, and felt granular from the enlargement of its cryptæ; following the course of the intestines, approaching the ileum, the mucus became bloody. The ileum, colon, and rectum, were loaded with a bloody mucus, having the colour and consistency of currant jelly. The mucous tunic of ileum was of deep red, with the capillaries beneath highly injected. Laminæ were formed

on its surface, but no ulcerations. The mucous coat of colon was similar to that of the stomach, very much thickened, hardened so as to resist the scalpel, and gritted under its edge. It appeared to be the first step towards the transformation into cartilage, a degeneration of structure occasionally met with in the mucous tissue.

Observations.—Metfield entered the infirmary in the last period of what might be called a remittent bilious fever. During the last fall, a fever of this character was almost epidemic amongst the blacks of the city and suburbs. The sympathetic disturbances of the circulatory and nervous organs had subsided, an occurrence by no means unusual in this form of disease, when the patients appear to those who have not witnessed the course of the disease, or known its history, to be scarcely the subjects of medical treatment. I was called last September to see a gentleman, whom I found dying with black vomit and other symptoms of yellow fever. He had been ill six days, and the day previous to his death, he left his bed, went down stairs, took dinner with his family, and was considered by his attending physician, who had congratulated the friends of the patient, on what he considered a rapid recovery, as convalescent, until the appearance of the fatal signs—black vomit—cold sweats and sinking pulse—assured him of his error.

The examination of Metfield exhibits a condition of structure frequently observed, and which is the indication of a morbid state, generally terminating in a fatal manner. The thickening, the hardening, the approaching cartilaginous transformation of the mucous membrane of the stomach and colon, are not to be attributed to recent disease. It is the consequence of chronic inflammation, long sustained, producing a vitiation of nutrition. The diffused redness of the villi is to be referred to the same cause. But the swelling and redness of the cryptæ, the capillary injection, with the bloody mucus poured out into the stomach and intestines, were the consequence of acute inflammation superinduced on chronic inflammation, and in a structure that had undergone a morbid alteration. The vitality of a structure that has degenerated is always enfeebled, and it perishes very rapidly under excitement of its organic actions. Whenever acute inflammation is occasioned in a mucous membrane thus affected, phagedenic ulceration and gangrene are the most usual result. In Metfield this degree of destruction did not occur, but the extensiveness of the morbid change and activity of the inflammation, occupying the track of the alimentary canal, from the œsophagus to the anus, speedily broke down the vital forces of the system.

In this case, we have another evidence of the existence of acute en-

teritic inflammation, always most fully developed in the lower portion of ileum, in idiopathic fevers, so called. This fact cannot be too strongly impressed on the minds of practitioners, who should never lose sight of it in their method of treatment.

The cases that have been detailed, will serve to give an illustration of the physiological treatment of diseases; and the dissections will show the structures chiefly concerned in febrile diseases, with the pathological condition in which they consist. In the next number of the Journal, the subject will be resumed, and additional cases with autopsical examinations be given, with a view to determine the seats, the character, and nature of various diseases.

ART. V. *Successful Case of Ligature of the Internal Iliac Artery, for the cure of Gluteal Aneurism.* By S. POMEROY WHITE, Surgeon, Hudson, N. Y.

IN the early part of October last, Jacob Van Volkenburg, aged sixty, by trade a tailor, came to Hudson for the purpose of obtaining surgical advice. He presented to our view a tumour about the size of a child's head, located upon his left hip directly over the sciatic notch. He stated that it was of ten months standing, and that he experienced no pain from it. His general health had been good, except that he suffered from rheumatism. Upon making an examination of the tumour, the skin was found not discoloured, fluctuation was perceptible but there was no pulsation. The absence of the last symptom rendered it difficult to decide upon the nature of the case, and accordingly we postponed giving an opinion until a consultation could be held with his family physician, Dr. HICKS, of Columbiaville. The doctor stated that the tumour could be removed by pressure, when small, but, from other cases he had seen of a similar kind, he presumed that it contained pus. He proposed opening it, and as that was the only way of ascertaining, unequivocally, the nature of the disease, we acquiesced. He accordingly punctured it, and nothing but florid blood made its appearance. A probe was passed in, and an aneurismal sac was found, about five inches deep. It was also discovered that the parietes of the sac were very firm and unyielding, which accounted for the absence of pulsation. After allowing a pint of blood to be discharged, the orifice was closed with a suture and adhesive plaster. It was observed that after this and also subsequent

discharges of blood, that the sac would fill again and the tumour resume its usual dimensions. The disease was supposed to be produced by repeated falls upon his left nates. He was a man of rather intemperate habits, and, when stupified by liquor, would fall, as they expressed it, like a log. Being also lame in his left limb, from rheumatism, he, consequently, was most liable to fall upon his left nates.

The consultation board having unanimously concluded that the disease was aneurismal, it then became a question whether it was most for the interest of the patient to tie the gluteal or internal iliac artery. As a precedent for the former, we had Mr. John Bell's famous case. In that, with all his dexterity, he barely succeeded in saving his patient, in consequence of the hæmorrhage, though some allowance must be made for his usual hyperbole. My father, also, stated in the consultation, that he had been under the necessity of tying the gluteal at the notch, but under the existing circumstances of this case he would not recommend that operation. Indeed, the inability of compressing the artery above the disease, the possibility of the patient dying of hæmorrhage before the artery could be secured, and the probability of the artery being diseased within the notch, were insuperable objections to tying the gluteal. On the other hand, we had an encouraging although a solitary* precedent, in the case of Mr. Stevens of the island of Santa Cruz. There the disease was the same and the application of a ligature to the internal iliac proved successful. The operation of tying the internal iliac was accordingly concluded upon, though the patient's age was considered as a circumstance that would operate against its success. He at first declined having the operation performed, but as profuse hæmorrhage repeatedly supervened, he became weak and alarmed, and requested us to pursue whatever course we deemed most expedient.

On the 23d of October he was laid upon the table, and an incision was made of a semi-circular form, commencing two inches to the left of the umbilicus, and ending near the external ring. It was seven inches in length, and the convexity of it was towards the ileum.

After dividing the skin, cellular substance, and superficial fascia, it became necessary to secure a few small arteries. The tendon of the external oblique being exposed, was next divided, and then the internal oblique and transversalis with its fascia. The peritoneum, which now presented, was detached from the iliacus internus and psoas magnus muscles, with the fingers, and was pressed with its

* I have, since the operation, understood that the internal iliac has been tied by a Dr. Atkinson, of England, but without success.

contents towards the right hypochondriac region, by the assistance of my father. The external iliac was immediately felt, and by passing the finger towards the sacro-iliac symphysis, the internal iliac was distinctly recognized. The artery was then exposed with the handle of the scalpel, and the ligature passed under with the Philadelphia needle, one inch from the bifurcation. Instead, however, of drawing up the needle part with the hook, I found it more convenient to take it with the dressing forceps. One ligature being passed, it was found necessary, from the great depth of the parts, (being about five inches,) to pass down the knot with Dr. A. E. Hosack's knot applicator. The ligature was then firmly tied, and the parts were brought together with sutures and adhesive plaster.

In this operation the same difficulty existed as in the case of ligature of the common iliac, by my distinguished friend, Dr. Mott, of New York, viz. the constant protrusion of peritoneum from abdominal compression created by the struggles of the patient.

Some pain in the bowels, and fever came on a few days after the operation, which was removed by venesection and a laxative. Union by the first intention had taken place to a considerable extent at the first dressing on the eighth day. A considerable quantity of pus was discharged during the first four weeks, at the expiration of which time the ligature came away. The tumour has discharged its contents gradually, and the parts have assumed their natural appearance. The patient has so far recovered his usual state of health, as to be able to walk about his neighbourhood.

Hudson, N. Y. December 1*st*, 1827.

Art. VI. *On Superfœtation and Bipartite Uteri.* By James M. Pendleton, M. D. Lecturer on Midwifery, and Diseases of Women and Children, in the New York Medical Institute.

It may perhaps be considered by some, that the pages of a public journal, might be more usefully occupied in the examination of subjects of a more practical nature, but it should be remembered that in the investigation of every subject, facts are frequently unexpectedly developed, which, in their application, are extensively and practically important; I therefore trust the subject I have selected will not be without interest. The subject of superfœtation as a department of forensic medicine, cannot fail to interest every physician anxious to acquire a thorough knowledge of his profession.

By the term superfœtation is meant the impregnation of an ovum at a time when a previous ovum already occupies the cavity of the uterus. Whether this ever takes place is doubted by many; it becomes necessary therefore, in the first place, to establish the fact, before attempting any explanation of the mode in which it occurs. For this purpose I shall select a few well authenticated cases. In the Dictionnaire des Sciences Medicales, Art. Superfœtation, is related the following. Marianne Bejaud, aged thirty years, was delivered of a boy at her full time, April 30th, 1748. The labour was easy and natural in all respects, and she soon recovered, she remarked, however, what had never occurred in her previous labours, that there was neither lochial discharge, nor secretion of milk from the breasts. A short time after her confinement, she experienced sensations of motion in the abdomen; the singularity of this circumstance led to an examination, and a fœtus was discovered conjectured to be about four and a half months old. From this period the abdomen regularly increased in size, she had nausea, morning sickness, and all the symptoms of pregnancy until the 16th of September, when she was delivered of a girl, full grown, and perfect in all its parts. Under the same article, is a second case: Benoite Franguet was delivered of a girl on the 20th of January, 1780. After her confinement she had no lochial discharge, nor was there any secretion of milk; the abdomen remained larger than usual after delivery, and continued gradually to increase until the 6th of July, when she was delivered of a second daughter, apparently arrived at maturity. By a reference to the dates in these two cases, it will appear, that in the first the second conception took place four and a half months after the first, and in the second, three months and fourteen days after the previous one.

The following case is related by Madame Boivin, sage-femme de l'hospice de la Maternité in Paris. A woman, forty years of age, was delivered, at her full time, on the 15th of March, 1810, of a small child. The abdomen remained distended, and Madame Boivin supposed that there was some foreign body in the uterus. The hand was passed into the uterus, and the cavity was found empty. During two months the woman experienced motion in the tumour, and on the 12th of May she was delivered of a girl, small, weak, and who breathed with difficulty. This woman stated that she had not lived with her husband for a long time, and that the two children were the result of a connexion with another man, once on the 15th and 20th of July, and again on the 16th of September; it will be observed that

these periods correspond exactly with the differences between births of the children.

These cases are sufficient to establish the fact of superfœtation, according to the definition which we have given it. Periodical journals are filled with cases which are erroneously described as cases of superfœtation of this kind, as the case related by Dr. Dewees, of a white woman who was delivered at the same birth of two children, one white and one black. What does the case prove? Nothing but that two ova became impregnated by two successive connexions at the same time by two individuals of different colours, and should properly be considered as a case of twins. The impregnation of two ova, in all cases, is probably the result of a distinct connexion, as it is well established that in cases of twins the children are rarely of equal size or apparent development. The same thing may be said of th case of the negress of Gaudaloupe, who was delivered at the same time of a black and a mulatto, she confessed she had connexion the same evening with a white and a black.

There is another case, not unfrequently met with, where an error exists in considering it as superfœtation. It is where at birth there are two children, one of which is considerably larger and more advanced than the other; or perhaps one is alive and perfectly formed, whilst the other is dead and very imperfect. Of this kind is the case related by Dr. Denman of the lady of Sir Walter Farquhar. When about five months gone, she experienced a most dreadful fright, and from that time the size of her abdomen began gradually to subside; on the 11th of February she was delivered of a fine though small girl. She continued in great pain and danger until the 25th, when she was delivered of a dead fœtus of about the age of four months. Instances are by no means rare of women being delivered of a full grown fœtus and at the same time of an embryo more or less advanced. Dr. Cossan, in his *Recherches Anat. et Phys. &c.* gives the following instances, "The wife of a surgeon at Amsterdam, was delivered of a well-formed child; ten hours afterwards, she discharged a small embryo having the umbilical cord filled with hydatids."

He relates the following, communicated by Mr. Percy, as a case of superfœtation, which may be taken as an example of the generality of such cases related in journals. A woman of Torrigny found herself pregnant for the third time. At four months, the motions of the fœtus were distinctly felt. These movements suddenly disappeared; at the end of about seven weeks they again re-appeared, and continued until the expiration of nine months, when she was deliver-

ed of a male child, small but active. After the delivery, the pains continued, and there was discharged from the uterus a black, soft, spongy mass, in the middle of which was a fœtus of four months. This, says Mr. Percy, is another example, to add to the others, of superfœtation. It is certainly more reasonable in this case to suppose, that at the commencement of pregnancy it was simply a case of twins, and that from some cause unknown one of the fœtuses had died and the other proceeded to maturity. There is also one more instance in which superfœtation is frequently described to have taken place, that is, where a female becomes pregnant at a time when she is labouring under an extra-uterine conception; the pages of our journals show that cases of this kind are by no means unusual; as a subject of inquiry we shall not consider them on the present occasion. With this limitation of our subject to those cases in which a female becomes impregnated after the ovum has passed into the cavity of the uterus, and in which the delivery of the two takes place at different periods and the fœtuses are both mature and perfectly formed, we proceed to consider the explanation of the mode in which this happens. Various opinions have been promulgated on this subject. First, it has been supposed that a second ovum impregnated has passed through the fallopian tube, to the cavity of the uterus, where, meeting the membrana decidua, it has pushed it away and attached itself to the uterus; the objections to this are, in the first place, the changes which the uterus undergoes in consequence of impregnation, the formation of a membrane which lines the cavity of the uterus, by which even if the ovum could become impregnated it could not get into the uterus, but secondly, the secretion of a mucus in the neck of the uterus by which the semen could not come in contact with the ovum, and consequently no impregnation be possible.

Dr. Dewees explains the occurrence of superfœtation on the existence of seminal absorbents arising from the vagina and conveying the semen to the ovum, where impregnation takes place. It cannot be required to produce arguments to refute a doctrine which is founded on a gratuitous assumption, such as the existence of seminal absorbents. No anatomist whose works I have ever seen speak of such vessels, and they probably owe their origin to the difficulty which attends every attempt at explaining the mysterious subject of conception. We shall now endeavour to show that this fact can be readily and satisfactorily explained by reference to the fact of the uterus being found divided into two compartments totally distinct from each other. That the uterus is thus found bilobate, or, as it is usually stiled, double, the following cases satisfactorily establish.

Dupuytren gives the following instance, "A woman, thirty-eight years of age, was brought to his theatre for dissection; a red substance was seen projecting from the vulva; when traced, it was found to extend throughout the whole length of the vagina: the os tincæ was divided by clefts, one perpendicular and one transverse. The finger when insinuated met with an obstacle in the median line of the uterus, on each side of which there was an opening. The neck of the uterus and the body were divided and separated from each other. The preparation was preserved in the anotomical museum of the Faculté de Paris.

The case related by Dr. Tiedemann is very interesting, and affords a practical caution to accouchers in forming opinions from manual examination. This female, during her labour was visited by two physicians, each of whom examined her; one declaring that she was not pregnant, that the os tincæ was firm and close; the other, that the os tincæ was open, and the head already engaged in it. This difference of opinion caused a discussion which led to an examination, when they found two vaginæ and a double uterus. Madame Boivin relates the following. In August, 1813, there was brought to her hospital a child, a few days old, who died shortly after of an imperforate anus. On examining the body, the uterus was found divided into two portions resembling lateral cones and opening into one vagina.

Haller mentions the following case. A young lady, aged about twenty-six years, after being a long time indisposed, died of hysteric convulsions. On examining the body he found a double uterus with two vaginas, each accompanied by a single tube and ovary of a natural shape. A remarkable case was related, by M. Chaussier, to the Faculté de Medecine of Paris. He exhibited the uterus of a woman who died at the Hospital de la Maternité, where she was delivered of her tenth child. The uterus consisted of but one-half, and that extending toward the right side: there was but a single fallopian tube and ovarium. Examples of double uteri might be multiplied to a great extent, but the foregoing are sufficient to establish the fact of their actual occurrence. Those who require further confirmation, may consult the works of Haller, Eisenmann, Memoires de l'academie des Sciences, Canestrini Historia de Utero duplici, Memoirs of the Royal Society of London, vol. iv. Dictionnaire des Sciences Medicales, &c. where they will find numerous cases of this kind, under the denomination of uteri double, bifed, bilobate, bicorn, bilocular, bipartite, &c. &c. Granting these facts, which cannot be denied, the whole difficulty of superfœtation disappears, each of these cavities may be considered as

distinct uteri, aud such in fact they are, not only in function, but, in some cases, actually separate and distinct throughout; it resolves itself into a parallel case to that of many animals where the uterus is separated into two cornua, and in which superfœtation is known to take place. The probability of this unusual structure of the uterus, in cases of superfœtation, is strengthened very much by the case of Madame Boivin. She states that after the birth of the first child, she passed her hand into the uterus to ascertain the cause of the tumour which was perceptible externally, and she found the cavity empty. This would be the case certainly if she examined the cavity from which the child was expelled.

The existence of two cavities in the uterus also explains the occasional occurrence of menstruation during pregnancy, a fact established by the testimony of Denman, Bard, Hosack, &c. Having, therefore, established the fact of superfœtation and the difficulty of explaining it, and also the frequent occurrence of bilobate or double uteri, and the natural solution which it affords of all those difficulties, we may naturally conclude that where one exists the other will be found to exist also. I shall not at present consider the confirmation which this subject gives to the theory of analogues, promulgated by M. Geoffroy St. Hillaire, nor to the correspondence which these various degrees of anomaly in the structure of the uterus have with the structure observable in the various scale of inferior animals. This may be the subject of another paper.

Art. VII. *Remarks on the various modes usually adopted for the removal of the Tonsils.* By Alexander E. Hosack, M. D. of New York.

THE frequent occurrence of the disease requiring the operation of removing the tonsils, should be deemed a sufficient apology for calling the attention of the profession to a subject apparently so simple in itself, and which is rendered still more so from the various improvements suggested by the surgeons of this country, as well as by those of Europe.

Of late years the removal of the tonsils by the canula and silver wire, was considered the only safe and practicable mode of removing those glands. The mode of operating was by means of a double canula from three or four inches in length, armed with a silver wire, the latter to be placed round the tumour, and to be drawn with a

degree of tightness requisite to strangle the part inclosed, and the wire to be tightened from time to time, until the part dropped off; which generally was accomplished within four or five days. To Dr. Physick the credit is due of shortening the suffering of the patient, by removing the wire after the first twenty-four hours, leaving the slough to separate by the process of nature; and by substituting an iron wire instead of silver, which is more readily disengaged from its attachments; but even with these improvements the patient suffered much, not only from the pain of the application, but from the inflammation and fever which is attendant upon this mode of operating. All other modifications of this plan, are very unimportant. Having had an opportunity, during my late residence in France, of frequently witnessing the successful removal of the tonsils by the knife, and having, since my return, performed that operation in six instances with the same favourable results, I avail myself of the opportunity afforded me through the medium of this journal to call the attention of the profession to the manner of conducting this operation, and the advantages it possesses over every other mode of removing the diseased tonsils—nothing more is necessary than to pass a hook through the body of the enlarged gland, and to raise it from its bed between the arches of the palate, then to pass a probe-pointed bistoury under its base, and with one stroke to sever it from its connexion: the hæmorrhage never exceeds two ounces, and is always to be arrested by a draught of cold water.

The following case is illustrative of the advantages which this mode has over all others before mentioned:—

A young lady, fourteen years old, suffered great inconvenience for a long time from an enlargement of both tonsils. In 1826, she was subjected to the mode recommended by Dr. Physick; as soon as the wire was applied, she was seized with convulsions,* which were only subdued by the removal of the wire: from this circumstance, the mother, who related to me this fact, had made up her mind never to have the operation attempted a second time. Dr. Brown, the attending physician, consulted me as to the practicability of removing the tonsil of the opposite side by means of the knife: to this there could be no objection; having assured her that it would be attended

* Such an accident never occurred to Dr. Physick, and in conversing with him on this subject, he informed us that the greatest fault which can be committed in the application of the ligature is, not drawing the wire sufficiently tight to destroy the vitality of the part as quickly as possible, when this is done the severity of the pain generally subsides in the course of a few minutes, he however decidedly prefers excision.—I. H.

with a momentary pain, and that very inconsiderable compared with what she had experienced, she consented to the operation: it was performed in the short space of half a minute; the patient instantly declared that the pain bore no comparison to her sufferings caused by the first operation, nor afterwards did she experience the least inconvenience, even the next day she was enabled to walk out for pleasure. The objection usually advanced to this practice arises from an erroneous idea, as to the vascularity of the tonsil, and the hæmorrhage to be apprehended. Referring to the vessels of the throat and posterior nares, we find that the artery, which nourishes the tonsil is so indirect in its origin as to have the force of the circulation expended before it reaches its destination, being a branch of the third branch of the facial, which again is the third branch of the external carotid, making in all no less than six branches—under these circumstances hæmorrhage to any great extent is certainly not to be expected: the facts too on this subject are so numerous as to banish all apprehensions of danger from this source.

It may be remembered that this operation is not of modern date, but was performed by the ancient surgeons. To Celsus the credit appears to be due as the projector, and the first to put in practice this mode of operating with the knife. Prior to and about the time of Celsus, it was the practice literally of gouging them out with the fingers and nails, and for this purpose the latter were permitted to grow to a convenient length. If at any time the resistance was found to exceed such means, they then felt themselves justified in removing the diseased parts by means of a bistoury and hook, such as was recommended by Paulus Ægineta, the bistoury used for this purpose being concave on the side opposed to the tongue. Both of the last cited operations by the fingers and by the knife were objected to by Fabricius; he condemns the first as being quite as difficult as dangerous; the mode by excision he considers hazardous, from the hæmorrhage that is likely to ensue, but he has not noted any instance in which such hæmorrhage took place. It is at this time that we see the actual cautery recommended for the cure of this disease: however useful it may have been found in other complaints, it certainly was ill-judged in this, nevertheless it soon came into general use in most parts of Europe. Afterwards the feelings of humanity revolting at this application, the slow caustics were substituted, and finally the ligature took their place. They all received the sanction of Wiseman and Heister; the former made use of the ligature at first, and the bistoury afterwards, supposing that he was enabled to close the larger vessels before removing them with a cutting instru-

ment; if the tumour was pendulous, the knife was preferred; if its base happened to be broad, the patient was doomed to suffer the agonies induced by the application of the hot iron—those who made use of the potential cauteries were cautioned against allowing the potash to slip from the pincers into the œsophagus or trachea. The ligature was now in great vogue in Germany and Italy; Moscati, who had many opportunities of practising the various modes then in use, states that he was obliged to abandon the operation with the ligature, in consequence of the inflammation which always supervened, having, in many instances, threatened the lives of his patients. But adopting that of Celsus, he was almost as unfortunate from the circumstance of the patient being seized with a convulsive cough during the operation; consequently the tumour being half cut through, it rested upon the glottis, and nearly caused suffocation: as there is no direction given by him whether to commence the incision above or below, we must draw the inference that it was made from above downwards; he afterwards made use of scissors; not finding them as convenient as the bistoury he was obliged to return to it again—he never could have had fear of hæmorrhage, for he remarked that the vessels of the tonsils were very small. An improvement suggested by Desault, merits our notice—it is as follows:—a hook being passed through the gland to suspend it, then with two plates of silver soldered above and below, notched at one end, were applied in such a manner as to receive the tonsil, a blade is then pushed between the plates, which will separate the tumour in part—three efforts are usually made for this purpose. By referring to the works of that author it will be more readily comprehended, as it is illustrated by a plate. We also find that Desault recommends the use of the ligature should the patient refuse to submit to the excision, in that case he gave preference to the plan which he recommends for the removal of the polypus. Still he speaks of the dreadful consequences attendant on such practice. The plan of operating varies but little as it regards the instruments which are requisite in applying the ligature, they are all injurious and all answer the purpose to those who may prefer them.

On reviewing this short history of this operation, we find the plan first adopted by Celsus maintaining its importance, and sustained by the recent observations and experience of Dupuytren, Roux, Vacca, and their followers.

ART. VIII. *Case of* Mr. ADRIAN A. KISSAM, *Student of Medicine, who perished in a few days after receiving a slight wound in dissecting. Reported by* JOHN D. GODMAN, M. D. Professor of Anatomy and Physiology in Rutgers Medical College, N. Y.

ON Tuesday, the 27th of November, about eight o'clock in the evening, ADRIAN A. KISSAM made an incision about a third of an inch in length, across the fleshy part of the last joint of his left middle finger, which bled freely. He was engaged at the time in studying the relations of the abdominal viscera, and immediately previous to the reception of the cut, had been using his scalpel about the inferior surface of the liver, and the parts of the intestine which usually are discoloured by the fluids which in the dead body filter through the parietes of the gall-bladder. He complained of considerable smarting at the moment, and when my attention was first called to the wound, he was standing by the table squeezing the blood from the end of the finger. I requested him to wash his hands perfectly clean, with soap and warm water, of which there is always an abundant supply in the room, to suck the wound forcibly until he could no longer draw blood, and to close it up securely with court-plaster, adding that when this was done the danger would be over. Thinking that this direction would be at once followed, I went to other parts of the room and assisted the various classes in their studies. Some time after, returning to the table where Mr. Kissam was still employed, notwithstanding his wounded finger, examining and removing the abdominal viscera, I once more repeated to him the necessity of attending to the wound, and concluded by warning him to recollect, that if he neglected the advice it was "at the peril of his life." Unfortunately! he continued to pursue his dissection, and contented himself with merely washing his hands when he withdrew. Before he arose the next morning, he was seized with nausea and vomiting; he came to the college at ten o'clock, and while there became sick and vomited; his pulse was considerably excited, and his whole system appeared to be in a state of tumultuous uneasiness. Dr. MOTT saw him at this time, advised him to go home, and get his father, Dr. BENJAMIN KISSAM, to bleed him, and administer some cathartic medicine; he also directed him to apply a poultice to the finger, and to keep as quiet as possible. He went home and conformed to the direction in all points except in that of being bled. The medicine operated well, but he passed a wretched night. On the morning of the second day from the reception of the wound, (Thursday,) I was called to see him in consultation with Dr. Mott and Dr. Kissam, his father.

When I entered the room he was standing by the fire place with his left arm stripped, which Dr. Mott was examining, and never can the impression be effaced from my memory, which the expression of his countenance produced upon my mind. The left side of his face looked very much like the face of a paralytic, the muscles seeming relaxed and powerless, although there was no distortion towards the right side. An expression of intense anxiety was imparted to the countenance, and gave an air of wildness and alarm to all his movements. He complained of great pain in his head; the arm was not remarkably painful, the wounded finger slightly so, and the wound itself exhibited nothing of active inflammation; the pulse was not remarkably excited. The absorbents of the chest extending along the border of the pectoralis major were visible, being inflamed; none of the absorbents of the arm were similarly obvious.

A strong ley poultice was directed to be applied to the wounded finger, a large bread and milk poultice to the axilla, and ten or twelve leeches were applied to the head. The spirit vapour bath was also suggested with a view of determining to the extremities and surface, and if possible to produce perspiration; I have personally experienced under similar circumstances, the greatest relief from this treatment, and was inclined to hope its effect in this instsnce would be beneficial. Dr. Kissam applied this bath, (with Jenning's apparatus,) for upwards of half an hour, without any other effect than that of exciting a glow upon the extremities and surface of the body which had previously been cold.

When we visited him at half past four o'clock the pain in his head was greatly increased, his countenance indicated much congestion of the brain, he was drowsy, and spoke with hesitation, and the pulse was full and strong, though yielding when pressed. In consequence of these symptoms, we resolved to bleed him. Dr. Mott opened a vein in his right arm, and drew about eight ounces, which afforded immediate relief. All the symptoms of distress about the head ceased; the expression of countenance became natural, and he spoke freely, distinctly, and cheerfully. The nausea and disposition to vomit, which had existed from the first, now began to become more troublesome, and with a view to remove this distressing condition, a blister was directed to be applied over the epigastrium, after the skin had been reddened by the action of a mustard plaster. Blisters were also applied to the insides of his legs, and sinapisms to the soles of his feet. He remained tranquil at bed-time, and on the whole we were inclined to hope.

Friday—the blisters drew well, but made no change in the state

of the stomach; during the night he had been somewhat delirious, but was now composed and steady—he said he had drank considerable quantities of fluid during the night; his stomach felt distended and uneasy. He then retched, and threw up a mouthful of yellowish coloured fluid. In a minute or two afterwards he called for the basin, which I held for him; he made an effort to vomit, and threw up a solid portion of fæces about the size of a small nutmeg, accompanied by a considerable quantity of fecal matter mixed with fluids which had been swallowed. His head pained him excessively. He had no sensation of burning about the stomach, and did not feel the least uneasiness on pressure of the abdomen. A dose of volatile alkali, 15 gtts. and Hoffman's anodyne liquor was administered, which he retained. He was ordered a similar dose every three hours. He fell asleep, and remained quiet for some time. At 10 A. M. the determination to the head recurred with great violence, cups were immediately applied to the temples, and subsequently a blister to the back of the neck. The cupping relieved his head considerably. He now, for the first time, complained of pain in his finger, which was very slightly swollen, I laid the finger freely open from its second joint to its extremity.

At this time he was visited by Dr. Hosack, who advised a repetition of the general bleeding, and he was accordingly bled from the arm until about six ounces were removed. The violence of his pain in the head and general uneasiness were abated, and he remained tranquil for some hours after. When we visited him again in the evening, his pulse was steady though compressible, the irritability of his stomach, and the disposition to vomit still continued when he swallowed any fluid in quantities larger than a spoonful at a time. At bed time there was some increase of the heat and uneasiness about the head, for which he was directed to be sponged, occasionally, with tepid vinegar and water; and as his stomach rejected every thing, unless in very small quantities, he was to take a table-spoonful of toast-water, of cold tea, or plain water, through the night.

About twelve o'clock of Friday night, Dr. Mott was called suddenly to visit him, and found him labouring under an increase of the vomiting, or rather the symptoms of ileus began again to show themselves. As the surface had been already extensively blistered and the depletion which had been employed had caused no change in his dreadful condition, Dr. Mott administered an injection of one hundred and twenty drops of denarcotized laudanum. This suspended the vomiting, produced a full anodyne effect, and in the course of a few hours was followed by a general and free perspiration. He slept

during a considerable part of the forenoon and when awake was perfectly rational. He appeared so much better, altogether, as to inspire us with hope that the worst was over, and that his system would begin to recover from the dreadful shocks received.

Saturday.—As the drowsiness produced by the opium still continued, some alarm was expressed by members of the family, in consequence of which a simple clyster was administered which caused a moderate evacuation, and in the course of three or four hours several evacuations of dark though not very offensive matter. This indication of the cessation of the inverted peristaltic action, induced us to hope that the stomach would now retain some nutriment, which was directed to be prepared; but while it was getting ready, symptoms of great prostration began to appear. The pulse sunk, the dejections became frequent and involuntary, and a vomiting or rather belching forth of a dark green matter, convinced us that our hopes were entirely vain. In this condition we attempted to administer cordial and stimulant medicines, though conscious that little or nothing was to be expected from them, and the rapidity with which our patient sunk, soon caused us to desist from our unavailing efforts. He was perfectly rational and collected; insisted that his medical attendants should declare that they had no further hopes in saving his life, and after he had forced them to give their reluctant assent to his inquiries, he resigned himself with calmness to his fate.

Though his extremities were now cold, and the hand of death was evidently upon him, he called all the individuals of his family around his bed, and spoke to them in turn, and by name, bidding them a most affectionate farewell. He continued in a state of perfect calmness for several hours, during which time the ordinary means of sustaining and arousing the system were employed. Towards morning some slight degree of reaction occurred, and caused a faint hope that even yet his life might be saved—but this hope was fugitive. He continued to sink until the moment of his death, which happened on Sunday morning the 2d of December, 1827.

It is scarcely necessary to add, that his decease cast a deep gloom over his fellow students. His ingenuousness and excellence of character; his devoted application to his studies; and the ardour with which he sought to distinguish himself among his class-mates in every laudable enterprize, had acquired for him the respect and esteem of all who knew him.

[We are permitted by our friend and colleague, Dr. Godman, to express our suspicions, that the above case was one of acute and violent inflammation of the mucous membrane of the intestines, termi-

nating in gangrene, and that the wound received in dissection was a mere coincidence, and did not produce the symptoms from which the patient suffered. As no post mortem examination was made, in consequence of the request of the patient, it is impossible to verify the correctness of this opinion; but it must be acknowledged, that the symptoms were very similar to those of inflammation of the mucous membrane of the intestines, and different from those usually produced by wounds received in dissection. I. H.]

ART. IX. *On the Safety and Advantages of Mercurial Inhalations.* By SAMUEL JACKSON, M. D. of Northumberland, Pa.

THE beginning of the nineteenth century is distinguished in the medical world, far above any former period, for the persevering industry of physicians in rescuing many from an untimely grave, who but a few years ago were *scientifically* given over to the ravages of disease, and the triumphs of death. The iliac artery, the carotid, the innominata, the aorta, have all been tied; diseased ovaries have been removed; the abdomen has been opened and the invaginated bowels rectified; the thigh has been successfully amputated at the hip; the parotid gland dissected out; and bronchotomy is no longer considered an affair of tremendous moment. If we should pretend to bring before the profession a simple process, by which more lives may be saved than by all these splendid operations combined, we may yet hope to escape the imputation of empirical vanity, as it will appear extremely facile, and within the capacity of every attentive physician.

A successful method of curing common diseases confers little splendour, but infinite usefulness; for more patients die of a simple pleurisy and its consequences than of the whole group of maladies requiring those fearful operations. To make ourselves acquainted, therefore, with ordinary diseases, and their methods of cure, is the primary duty of the practical physician; and hence it was that while the students in the University of Edinburgh were curiously gaping over the dissection of a bicephalous child, one of their number, who afterwards became a celebrated physician, was found busily employed in examining the patients in the fever ward. He said that he should probably spend all his life among febrile diseases, but that he might never see a double-headed child again. Impressed with these sentiments, we shall venture to lay before the profession a method of treatment which we have found successful in some dangerous and almost hopeless states of disease. We offer it, not as absolutely proven, but

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as in probation; and hope that it will claim the attention which the subject, independent of this paper most eminently merits.

It is well known that in many diseases there often occurs a condition of the system, which would appear to render all remedies utterly nugatory, unless the patient can be speedily brought under the alterative or deobstructing powers of mercury. Such is the state of things in many of the congested and inflammatory cases of typhus, as also of the yellow and other bilious fevers. We often read of physicians labouring in vain to salivate a patient; the medicine is slower than the disease, or probably his susceptibilities are locked up by inflammation or congestion. In the local phlegmasiæ, also, a speedier method of affecting the system is required. A pleurisy, to which you are probably called too late, is not half subdued before the patient begins to succumb. You have done all that can be done by bleeding, blisters, and antimony; but the disease goes on, and there is no remedy unless mercury can be brought into action. But in all probability you have depended, and very plausibly too, on the use of common remedies till it is now too late to affect the system; or if you finally attempt it by frictions and calomel, the total operation of these passes off by the bowels, and your only hope is gone.

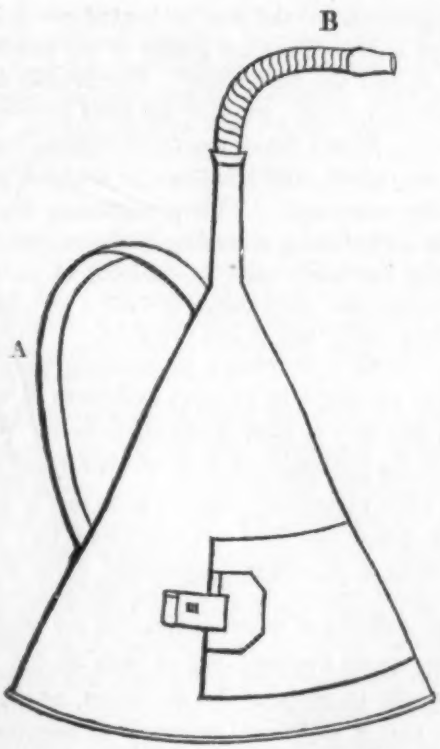
To insure a speedy effect in these deplorable cases, we have been for several years in the practice of using inhalations of the medicine, by which the system is soon possessed of the mercurial excitement and all its salutary effects, as it regards *these* states of the system, are very quickly attained. The preparation which we prefer is a modification of Lalonette's; it is less offensive to the lungs than cinnabar, and as it is easily and quickly prepared of materials within every one's reach, it may be considered as always in readiness. But inasmuch as our paper may fall into hands which are not in possession of a method of preparing it, we shall give an improved recipe from *Abernethy's Surgical and Physiological Observations.* It has been copied into *Rees's Cyclop. art. Fumigat.* into *Cooper's Surgical Dict. art. Mercury*—and probably into other books which we have not read, or which do not come into mind.

"Two drachms of aq. amm. are added to six ounces of distilled water, and four ounces of calomel are thrown into this liquor, and shaken with it; the powder is then separated by the filter and dried."

This is the preparation which was used by Pearson and Abernethy, for the peculiar fumigations recommended by Lalonette; but to this we shall add for the convenience of those who may not have the aq. amm. at hand, that the sp. amm. either simple or aromatic, is equally suitable. Rain or river water may be used when the distil-

led is not to be procured, and the medicine can be prepared in a single hour.*

When we first used fumigations, we evaporated the powder from a fire-shovel or a smoothing iron, and directed the smoke to the patient's face by means of a common funnel. This method answered pretty well, but a large portion of the medicine passed off laterally, without coming into the sphere of his respiration. To remedy this inconvenience, we covered the patient's head with a sheet, elevated on the segments of large hoops, and then evaporated the mercury within this little sudatorium; as by this means he could not fail of inhaling the proper quantity. But this method was altogether inadmissible when it became necessary to avoid an exhausting perspiration, and therefore we devised a little instrument which directs the whole volume of vapour immediately on the patient's lungs.



* We have not Pearson or Abernethy at hand, and it is many years since we read them. All the knowledge we possess of what they say on this subject, is derived from the above mentioned portions of Rees's Cyclopædia, and of Cooper's Surgical Dictionary.

The outline of this is a common tin funnel, about nine inches diameter at the base, with a flexible tube attached to the pipe. The base of the cone or funnel is closed with tin, and a door opens at the side large enough for the convenient introduction of a heated iron, weighing about two pounds. A little sheet-iron stand on the inside supports this iron, and thus prevents it from burning the bottom of the cone, or from rendering it too hot to rest occasionally on the bed. In the preceding figure, which will give an adequate idea of this little apparatus, A is a handle, which is very necessary as the cone becomes too hot to be held in the hand; B is a flexible tube of spiral wire covered with morocco, similar to that of MUDGE's inhaler.

SWEDIAUR, in speaking of fumigating external sores with cinnabar, directs an iron funnel formed of one piece without solder—a precaution wholly unnecessary, as no amalgamation can take place with either tin or solder in the present case.

To use the apparatus, let the iron be heated not quite to redness, and placed on the stand; about ten grains of the powder are then to be thrown upon it, and the door closed. The flexible tube directs the smoke to the patient's mouth, whether his head be covered, as above-mentioned, or not. When the evaporation ceases, another such portion is thrown on the iron, and from two to six such portions may be used in immediate succession. This process may be repeated every two, four, six, or eight hours, according to the exigencies of the case. When this method has been used for several days, the attendants have been salivated, and they must therefore be cautioned against respiring the fumes more than is unavoidable.

We should not think it necessary to observe, were it not in our own defence, that we ought to be more assiduous in watching the effects than when mercury is used in any other form. We have brought the system under the influence of it in twelve hours; and we presume, from our little experience, that it must be a very intractable state of the body which can hold out more than two or three days. In the use, however, of this hitherto dreaded mode of administering the remedy, we must regard the pulse and the general system; for if in these the happy effects of mercurialization are observed, we must proceed with the utmost caution; but as soon as the fetid breath is perceived, we ought to suspend the operation, as the present object is now attained, and if additional mercury be required, we can administer it in the ordinary way.

We are well aware that the intelligent reader already presumes to recognise in this method an exploded practice; but here we must implore his patience, while we set this matter in its proper light. Cri-

tics are sometimes too quick for their own understandings, and not unfrequently condemn before they comprehend. Let it be observed, therefore, that it was once the practice to expose the body and lungs of venereal patients to the fumes of mercury, in order to excite a salivation, instead of using the medicine by pills or inunction; but no where do we learn, as far as our limited reading extends, of snatching patients from the very grasp of death, by administering the fumigation in common diseases; for however well established may be the practice of salivating such patients, the present method of doing it seems to have escaped the diligence of medical investigation. The following quotation from *Bell on Lues Venerea*, will determine at once what the practice was, and also upon what principles it was abandoned; at the same time it will show how easily the system is affected, even when the vapour is not directed in a full stream on the lungs.

"The fumes of mercury are applied to the body by burning different mercurial calces in the patient's chamber. By thus breathing, as it were, a mercurial atmosphere, and having the fumes equally applied to every part of the surface of the body, the usual effects of mercury upon the system are soon produced, more quickly, perhaps, than by any other method. Where it is meant to raise a salivation suddenly, or to throw mercury quickly into the system, this is perhaps the surest method of doing it; for with the fumes of mercury a salivation is sometimes excited in the course of a few hours. This brought the practice into much repute, when salivation alone was considered as the chief part of the cure; but now when it is known that lues venerea may be cured without much salivation; that the more gradually the mercury is thrown into the system, the more effectually it operates; and that very violent effects are sometimes produced by fumigating with mercury, the practice has of late been very generally laid aside."

The author then goes on to show the many advantages of directing the fumes upon syphilitic ulcers, and even acknowledges that he had "met with a few cases in which the mercury either went off too rapidly by stool when taken into the stomach, or where it was not absorbed, if applied in form of unction to the surface of the body, and in which it soon proved effectual when used in this manner."

More recently we hear nothing of the respiration of mercury, unless for the purpose of applying the medicine directly to ulcers in the fauces. Lalonette and Abernethy were no doubt impressed with some horrific phantom of danger, in contemplating the exploded practice, since they enclosed the naked patient in a tin box, with his head extruded, so that he might breathe the pure air, while the fumes were operating on the external body. They excited a salivation with great certainty, but many of the patients whom our method regards, can-

not be removed from their beds to be thus incommodiously enclosed in a tin box.

The peculiarity, therefore, of the practice we are now recommending is reduced to these two points:—*First*, to direct the fumes to the lungs only, as this can be done without any disturbance to the debilitated patient; and *secondly*, to use them in all cases of common diseases for which a salivation may be indicated, and there is not time to effect it; or not sufficient excitability remaining to be acted upon by the medicine in common form.

With respect to the safety of this method, we presume there will be some question in the mind of every reader. Even the fumigation of the surface was denounced by CULLEN as a dangerous experiment, and it was, therefore, not without some trepidation that we ventured to apply it to a surface as extensive as the skin, and infinitely more susceptible of gaseous impregnations. It will no doubt be considered as rather an uncertain method, as the quantity the patient may respire, will be very different in different cases. But the same objection lies against its internal and cuticular use; for though we can in these applications limit the quantity, yet some stomachs and some skins are surprisingly sensible to the medicine, while others can hardly be affected, however zealous and intrepid our endeavours. It is true that we can form a pretty correct estimate of the mercurial excitability in many states of the system, but in many others we have much to learn; and since mercurialization is at all times a tentative process, the present method of tentation may possibly be rendered as safe as any of those in ordinary use.

The safety of the method, however, and its celerity also, are set forth, and in some measure confirmed, by an extract of a letter from Captain Sykes, published in the London Medical and Physical Journal, for March, 1827, and republished in the North American Medical and Surgical Journal, vol. iv. p. 172. A retort exploded in which mercury was distilling with lime, and the vapours salivated several persons in the course of twenty-four hours, a fact which the physicians of the army improved to their immediate use. The captain says—

"Our medical men produce salivation in twenty-four hours, and I have heard of a recent instance of its being produced in seven hours, by fumigation. My shastree, a learned Brahmin, asserts, that the practice of exciting salivation, by means of inhaling mercurial vapour, has been used by the Hindoos from time immemorial. Bees-wax is melted, and spread over strips of thin cotton cloth; an equal quantity of cinnabar in powder is spread over the waxed strips, which are then rolled up in the shape of candles. The person to be salivated is seated

on the ground and a blanket is thrown over him; the lighted cinnabar candle is placed under the blanket, so that he inhales the vapour."

The captain expressed some doubts of this pretended antiquity of the practice, but the shastree pointed out a passage in an ancient Sanscrit work, in which the process was described. This may have been an Indian imposition, unless the captain understood the language. The letter, however, and particularly the fact of the physicians having adopted the practice, is a very striking instance in proof of the practicability of our method. We may expect to hear, in due time, all the particulars, and the general result of their experiments.

In offering this remedy to the consideration of the medical public, let it be remembered that we propose it in those cases only which are nearly desperate under all common methods of treatment; nor even in these should we use it, at least in the present state of our knowledge, unless in all probability there might not be time to mercurialize the system in any other way. We are not proposing any new indications, but merely a new method of fulfilling those which have long been considered as perfectly orthodox. The practice of salivating in fevers, is with us by no means a favourite: on the contrary, we consider it as a painful and justly odious remedy, which not unfrequently prolongs the patient's distress; but every one knows there are states of the system, in almost every species of fever, which to all human eyes, cannot be relieved in any other way, and in these nearly all learned physicians have agreed to use mercury, until some milder method be discovered. Such are many congested and inflammatory cases, in which the free use of venesection is often inadmissible. Dr. Armstrong relies greatly on the use of mercury in all these dangerous states of typhus; and we have long heard, and shall probably long continue to hear, of the imperious necessity of salivation, in very many cases of yellow fever. This disease, as it appeared in Philadelphia in 1820, was an intractable malady, and the physicians relied greatly on ptyalism, but they were often unable to attain it.*

In the puerperal fever, a most interesting and alarming disease, large doses of calomel have been given, as in yellow fever, for the two-fold purpose of exciting catharsis and salivation. Many cases of this disease run so rapidly through the stage of excitement, that every thing must be done within a few hours, or the patient is lost. Some of these as related by Denman and Armstrong, are highly congested states of fever that might possibly be prepared for the operation of mercurial fumes by the warm bath, frictions, and external stimuli;

* Dr. Jackson's Essay, Philadelphia Journal, vol. 2, sub principio.

but, however this may be, we should propose this method as a last resort in all cases that have been too long neglected, maltreated, or that are sunk so low that venesection can be used no further, while unsuppurated inflammation is known to be in progress. From what we have seen of the puerperal fever we should consider the late practice of rubbing the abdomen with mercurial ointment as entirely futile. In fact, those cases that we have seen of the genuine disease would not tolerate such frictions, nor indeed any thing heavier than the anointing with a feather. We suspect this practice had its origin in the supposed analogy between the inflammation of puerperal fever and erysipelas; and we presume that time will find it as useless in the internal, as it is now demonstrated to be in *severe* cases of the external disease.

Upon the same principle that we should use it in puerperal fever, we should also recommend it in every species of internal inflammation, in which depletion could be carried no further, and there might not be time to introduce the medicine in the ordinary way.

In the pneumonia typhodes, which runs its fatal course in old weakly people and drunkards, with most appalling rapidity, we first conceived the idea of using these fumigations; but we have not tried them, as the disease disappeared from our circle of practice, when the bilious fevers invaded us, seven years ago. To these patients when broken down with old age or intemperance, venesection is certain death, so also is a profuse perspiration; and if the disease is not arrested before it inundates the bronchiæ—*væ medico*, the sick man, is forthwith suffocated. The very process of nature which cures the robust, is certain to destroy the debilitated.

Physicians have long placed their affections on mercury in hydrophobia, but complain that time is wanting to affect the system. We confess that to us a salivation has always appeared a very promising remedy, as the fatal symptoms would seem to depend on such internal inflammations and lesions as a strong mercurial excitement, is known to prevent, and often to remedy.

A disease almost as fatal as the hydrophobia, has lately become so frequent as to impress the most ardent and fearless votary of anatomical knowledge with terror and dismay. We presume the mercurial vapour will appear a promising remedy; and particularly if the malady should reach the fauces, as it once did in my own person, from having dissected a child who died of a very uncommon suppurative disease of this part.

In all venereal sores which are making rapid progress, and in which it is therefore desirable to arrest the disease without further loss of

substance, the practice of fumigating them has been long established. By directing the fumes on a man's nose, in order to save it quickly from further erosion, we salivated him in three days, though his system had resisted every form of mercury which a skilful physician had been giving him for four months. But on this subject there can be no disputation; we only mention the fact in order to show with what great facility the medicine operates.

Case I. John Mullin of this town, after repeated attacks of remittent and intermittent fever, applied to me last January, in the following deplorable condition. From having been a very healthy, vigorous man, with a blooming complexion, he was now pale and cadaverous —the conjunctiva bluish and shining—the features pointed—tongue foul—pulse 120, quick, salient, full, and strong—hard, dry cough, with pain under the sternum, and great difficulty of respiration—a dull pain in the region of the liver affecting the point of the right shoulder—the spleen enlarged—the legs œdematous—urine common in quantity, but very red, and without sediment—frequent epistaxis, with blood highly inflammatory.

Bleeding and blisters with their various coadjuvants were liberally used for the first week without any evident amendment, and as he was now supposed to be in a state of preparation for mercury, the calomel was given combined with squills. But before this had time to affect the system, he unexpectedly sunk surprisingly, and was justly considered hopeless by all his friends. The cough was very severe and dry, his breathing difficult, his pulse small, weak, salient, 140 in the minute; his whole appearance was that of a lost man. He was supported by the steady use of nourishing diet, and moderate internal, with powerful external stimuli; in two days the fumigations took effect, his mouth became sore, and a striking amendment appeared in his whole constitution. The salivation was continued by using the blue pill, and though the disease developed itself in a universal dropsy, he was carried safely through all his maladies and restored to robust health.

In this case the patient was sinking rapidly under an inflammation of the lungs, liver, and probably of other internal parts, and no medicine with which we are acquainted, the mercury excepted, could have been of any avail, nor do we believe that any other method of using it would have been successful. If it be said that calomel might have been used sooner, we may reply, that the morbid action was so high as to resist its salutary operation. When at last it was determined that mercury was the only remedy, the patient fell unexpect-

edly into such a state of collapse that calomel could not have been given without the utmost danger of a fatal catharsis; nor in fact would there have been time to obtain the specific operation of this or of any other of the common preparations. The poor man was ready to sink under a severe inflammation with incipient effusion, and nothing but the prompt operation of mercury could have arrested this precipitous disease, and prepared the system for the recuperative powers of nature.

Case II. Thomas, son of James Glydewell, three miles north of Northumberland, was seized in the winter of 1823, with bilious or bilioso-nervous colic, which was then almost an epidemic in our neighbourhood. While he was taking calomel and opium for the two-fold purpose of procuring comfort and exciting salivation, a severe purging of bloody slime took place, and reduced him in one night almost to the point of death. We found him in the morning nearly without a pulse, with the catharsis still going on, while the system was not the least affected with the specific influence of mercury.

Opium was given freely, and many stimuli used with the utmost diligence, among which were tinct. of cloves—comp. tinct. of bark—frictions with external heat—soup, and arrow-root. The mercurial fumigations were used by my own hands, for I did not leave the house during eight hours, as the patient was a young man of no little importance to his poor and laborious parents. But he gradually sunk till at midday he was without a pulse at the wrist, and at four o'clock his legs were cold. We now left him perhaps two hours, while we went half a mile, to open the body of another patient recently dead of the same disease, and upon our return we found him still sinking and laboriously engaged in giving valedictory charges to each member of the family. This exertion we presumed would soon cut his last thread, and therefore we left him—but with strict injunctions that he should be faithfully stimulated and nourished till they might find him certainly dying.

The next morning we rose by daylight, in order to expedite business and save time for opening the body. Far different was his fate. An old neighbour came smiling to the door at this early hour with the welcome but mysterious news that Thomas was better. The fact was that the mother, between hope and despair, persevered with the stimuli, and in the course of the night the mercury took effect and saved his life.

We shall not add more cases, as we have never taken daily notes of diseases, unless in a very few instances; having depended more

upon the recording of general results and the establishment of general principles. We have used the remedy in twelve cases with all the advantages that we could wish to derive from it, nor did we excite an excessive ptyalism in one single instance. It failed only in the case of a maniac, but here we believe it was not fairly tried. We have often lamented our omission of this medicine and our dependance upon gentler measures, but never have regretted the use of it in a single case.

We must here caution the reader against imputing to us the empirical folly of bringing forward a remedy which is to be infallible in the case of every dying patient: like all things human, it will often fail, even when tried under promising circumstances. All that we pretend is this, that it will sometimes succeed in affecting the system with mercury when other means would fail; and that, consequently, it renders one important indication in medicine, infinitely more facile and certain than it has hitherto been. Nor let any one suppose that we presume to have established this method as infallibly useful and imitable. Many unobserved and even inscrutable circumstances may have concurred in promoting the favourable operation of the mercury in our various cases, as a fortunate coadjuvancy of things unseen may for a time give a medicine some factitious reputation, which a multiplied experience will generally diminish or entirely nullify—a mortifying fact that has long been known in our tentative science.

Against the use of ptyalism in fevers much clamour has been raised, and, as stated above, we confess ourselves most vehemently hostile to the practice, whenever gentler measures will ensure our safety; but we cannot join in that indiscriminate reprobation of the practice in which some physicians find too much delight, and thus inculpate their own understandings as well as degrade and bring into suspicion the whole science of medicine. Dr. Hosack, in one of his reports to the governors of the New York Hospital, does fairly represent that mercury is a dangerous and highly mischievous remedy. When speaking of his typhous patients, he says, "they recover without that injury to the constitution, and that liability to rheumatism and other inflammatory diseases, that we frequently observe in those who have undergone the operations of mercury."*

We shall bow with becoming submission to such high authority, but at the same time shall observe that every careful practitioner

* Appendix to Thomas's Practice and Eclect. Rep. x. 274.

must have startled at this passage, and have begun to look around among his patients with no little anxiety, to ascertain whose constitution he had *injured*, and whom he had endowed with a *liability to rheumatism and other inflammatory diseases.* There is already too much prejudice in the world against this medicine, and physicians would confer respect on the profession by endeavouring to diminish it; while by thus holding it up to the blind inquisition of the reading community, they will weaken public confidence, and greatly derogate from the honour and utility of the healing art. The public ought to be apprised that almost any medicine is variously dangerous in the hands of ignorant temerity; but that learning and honour may be confidently trusted with the most powerful agents in the materia medica. As far as regards our own observations, whether confined to one particular practice or extended occasionally into that of other physicians, we have never seen any of these evils result from mercury. But at the same time we have fortunately had it in our power, through the long-continued use of the suspicious mineral, to relieve patients of *chronic rheumatism* or something similar though perhaps worse—the unhappy result of the non-mercurial practice in syphilis. So pitiable has been the condition of some wretched beings who have come from seaports, and from under the care of the anti-mercurial doctors, that we can no longer read of their opiate, and acid, and golden recipes, without some feelings of reprobation and contempt.*

* [We believe our coadjutor has viewed the cases to which he alludes, through the medium of strong prejudices. For our own part, at least, we lament that the non-mercurial practice in venereal disease is not more generally adopted. We certainly have not met with any case, properly treated upon that plan, in which we have had reason to believe that the patient suffered from mercury having been withheld, and we certainly have met with not a few in which it has been unavailing, and many in which the most distressing consequences have followed its exhibition.

"Mr. Rose has published in the Medico-Chirurgical Transactions, an account of 120 cases cured without mercury in his military practice during a year and three quarters. Mr. Guthrie successfully treated 100 cases in the same manner, and has seen notes of 400 more cured without mercury in the different hospitals. Dr. John Thomson relates 155 cases similarly cured by him in the Consolidated Depot Hospital at Edinburgh Castle. Mr. Hennen has published 105 equally successful cases, 20 of which were cases of true Hunterian chancre. And in a general investigation, undertaken by the surgeons of the British army, it appeared that, out of 4767 cases, 1940 were cured without mercury. Of these, 96 had secondary symptoms, but every man was fit for military duty immediately on his dismissal from the hospital. The average period for the

Ptyalism, as we have stated above, is a foul, painful, odious remedy, and never to be used when the safety of the patient is not at stake, or when gentler means will almost certainly succeed; but a little present distress is never to be weighed in the balance against certain danger, or even against lasting pain. The highest authorities in medicine have clearly shown, that, in every species of fever many patients are saved by mercury, who would be otherwise certainly lost; and this fact alone is a sufficient argument for our present purpose, since, as we have already said, we are not inventing a new indication in medicine, but a new and more successful method of fulfilling an old one. Whoever believes himself ready to perish, will gladly lay hold of this means of safety, however uncomfortable; let us then do unto others, as we would they should do unto us, and fly to mercury as the last hope. It will not only avert impending danger, but in many cases it will remove old obstructions, break up morbid associations, create new capacities of life, and almost regenerate the whole man: it is, with the solitary exception of cinchona, the greatest medical blessing which a benevolent Providence has conferred on his suffering creatures.

cure of primary symptoms was 21 days, and of secondary 36 days. The remaining 2827 were treated with mercury: 51 of these had secondary symptoms, and two men were rendered unfit for the service. The average period for the cure of primary symptoms was 33 days, and of secondary 45. The foregoing cases, it is stated, include not only the more simple sores, but also a regular proportion of those with the most marked character of syphilitic chancre. On a survey of the results it appears, that under the non-mercurial treatment, the disease more frequently advanced to the secondary symptoms—but that, on the whole, the average time of cure, both of primary and secondary symptoms, was less than it was in the cases where mercury was employed."—*Bigelow's Sequel.*

For further proofs of the efficacy and safety of the non-mercurial, or physiological practice, in syphilis, we refer to the valuable paper of Dr. Harris, in the North American Medical and Surgical Journal, vol. i. p. 38—to the work of Devergie, for a notice of which see our last number—to the elaborate treatise of De Brus, a review of which will be found in our present number—and the article Mercury in Chapman's Elements of Therapeutics. I. H.]

ART. X. *Case of Gun-shot Wound of the Leg, in which five-sixths of the structure at the seat of injury was destroyed, successfully treated, the limb being preserved.* Reported by JAMES A. WASHINGTON, M. D. House-Surgeon of the Pennsylvania Hospital.

CHARLES ULARY, aged eleven years, was admitted, under Dr. J. R. BARTON, into the Pennsylvania Hospital, on September 1st, 1827, with a recent gun-shot wound of the leg. A fowling-piece, which he had handed across a ditch to its owner, having been accidentally discharged, as soon as received, with its muzzle within two feet of him, its contents had passed entirely through his left leg, just above the ankle joint, the joint happily escaping uninjured. He was brought into the institution, before any application had been made to the part, but not until a few hours had elapsed after the accident, as he resided at the distance of four miles from the city. The wound presented the appearance of a large, ragged perforation, passing through the limb horizontally, and from side to side. The orifice on the inner side of the leg, was at least three inches in its vertical, and two inches in its horizontal diameter; but the size of the outer orifice was rather less: their margins were irregularly lacerated, as was the whole surface of the wound. The contents of the gun having passed through the limb, from so short a distance, a very considerable destruction of the part had taken place, and it was estimated that five-sixths of its structure, at least, had thereby been carried away.

The parts removed consisted principally of more than an inch of the tibia and fibula, their fractured ends, above and below, being that far removed from each other; also of the corresponding portions of the tibialis posticus and the long flexor muscles of the great toe and the small toes, as well as of the fatty matter interposed between them and the tendo Achillis. The skin covering the limb at the seat of injury, had, of course, been in a great measure destroyed. The parts that were left in front of the wound, consisted of a sound strip of skin about two inches in breadth, and of the muscles which it covered, the peroneous tertius, tibialis anticus, and the long extensors of the great toe and the small toes, which had not been materially injured; behind there remained the tendo Achillis, with another sound strip of skin, but barely sufficient to cover it. The long and the short peroneal muscles, situated on the side of the leg, and whose tendons pass together, behind the malleolus externus, had also escaped without being seriously injured, and were seen crossing about the middle of the external orifice of the wound, the silvery hue of the tendons

being still preserved. But what was the most important of all is, that the anterior tibial artery was found uninjured, in consequence of that portion of the periosteum covering the anterior part of the tibia being left, though but barely, and with a film of bone attached to it, here and there.

A consultation having been held between the attending surgeons of the hospital, Drs. Barton, Hewson, and Parrish, they determined, in consequence of the youth of the boy, and of the circulation being still carried on by the anterior tibial artery, as was manifested by its pulsation and the warmth of the foot, to attempt to save the limb. Although from the lacerated character of the wound, the hæmorrhage was rendered much the less profuse, particularly from the large vessels, yet from the extensive surface that had been exposed, sufficient bleeding had taken place to produce a very decided effect upon the system. When the boy was admitted his countenace was extremely pale, but reaction had, in a measure, ensued, and his pulse possessed tolerable force, though very quick in its beat.

The immediate application to the wounded surface, which was suggested by Dr. Barton, and had never before been used, as far as we know, consisted of wheat bran. His limb was placed upon a soft bed of cotton previously spread over with bran, after being protected by oil-cloth, in a kind of box, open at one end and above, and with side lids attached to it by hinges, and used for fractured legs in the hospital. The foot which had before laid upon its outer side, from the very considerable destruction of the continuity of the wounded part, being properly adjusted, the cavity of the wound was filled with the bran, and the limb for a distance above the wound, as well as most of the foot below it, enveloped in the same article. When the character of bran is considered, it will be understood how very well adapted it is to the dressing of a wound of this nature. It serves to absorb the discharge, and is thereby, in part, converted into a very good poultice, while by the compression thus induced upon the wounded surface, it will prevent any inordinate hæmorrhage, at least in a case so favourable to its application as the present. For the first five days the bran was only partially removed, and more fresh bran applied—so that the great pain that would have been produced by daily moving the limb to dress it, was obviated.

On the sixth day, the boy being lifted towards the foot of the bed, in order that the box might project beyond it, and over a tub placed beneath, the wound was entirely cleansed, by means of a syringe, with warm water, the bran being easily washed away. On this day, the first after the accident that the wound had been fully exposed to

view, its surface, which had been killed by the severity of the injury, presented a darkish aspect, owing to the sloughs not yet having separated. Considerable swelling had taken place at the part, in consequence of the inflammation which had supervened. The discharge which had as yet been seen, appeared principally to consist of a thin serous exudation of a reddish hue: only a slight trace of pus, having up to this time been observed.

By the eighth day, the upper portion of the wound, or that nearest to the knee-joint, had cast off its sloughs, and the exposed granulations presented a very healthy appearance, while the sloughing from the lower portion, or that nearest the foot, had not taken place: this difference being obviously attributable to the diminished circulation in the lower part of the wound.

On the fourteenth day the wound exhibited a healthy appearance, but the granulations were less florid than previously. On the twenty-fifth day the cavity of the wound was observed to be considerably diminished by the luxuriance of the granulations, and the contraction that had taken place in the limb: the loss of bony structure, allowing it to be thus diminished in length. On the twenty-eigth day, the cavity was still more reduced in size, and the fragments of the tibia had come into contact, from the contraction of the limb above noticed: the upper fragment was spear-pointed, and consisted of compact structure, while the lower fragment presented several points or a very uneven surface, and consisted of the cellular structure, of which the extremities of the long bones are formed. In comparing the legs together, it was found that the injured limb had been shortened rather more than in inch. The upper and lower fragments of the fibula, were also found in contact, but rather less of this bone being removed than of the tibia, it will be perceived that a slight curvature must have taken place at the seat of injury, in order that the fragments of the bones might thus meet. This bend of the limb inwards, was however but slight. In consequence of this disposition of the parts, the upper fragment of the fibula projected too much outwards, and from its outer surface being denuded of periosteum, its white appearance rendered it very conspicuous. Although the fragments had now come into contact and jutted against each other, still the foot required support, to prevent its falling to one side.

On the 9th of October, five weeks and a half after the accident, the process of exfoliation was, for the first time, observed to have been completed in a part of the exposed surfaces of bone. It has been mentioned that the lower fragment of the tibia consisted of spongy structure, and in a portion of its exposed surface, though the

supply of blood to it, was, of course, from its situation and the nature of the accident, much less abundant than to the more compact structure of the upper fragment, yet exfoliation here first occurred: a circumstance ascribable to the greater vascularity of the spongy structure of the bone.

From this time to the present date, the process of exfoliation has gone on, and is now very nearly completed: bits of bone thus cast off, or loosened from the living structure, have from time to time been removed. The depth to which the surfaces have exfoliated has in no part been great. The formation of osseous matter has also taken place so as to unite the fragments above and below, and for so long a time, and to such a degree, that for a month past no motion at the wound could be perceived.

It was mentioned in the previous part of this paper that a portion of the anterior periosteal covering of the tibia, with small scales of bone attached here and there had been saved. This remnant of periosteum has been a prolific source of the osseous secretion. There is correspondent to this portion, a protuberance consisting, principally, as indicated by its hardness, of osseous matter, while the parts of the tibia above and below appear to be very nearly in their natural relation to each other as regards direction. The cavity of the wound has for several weeks been filled up, with the exception of a sinus, in which a small probe may be introduced, that is left for the exit of the bits of bone which are from time to time cast off by exfoliation. As this process seems to be almost entirely completed, it is presumed that this sinus will shortly close. The foot and whole limb is somewhat swelled, and by measurement the circumference at the wound is twice that of the correspondent portion of the other limb. This difference will be in a great measure diminished after the cure is completed, and he shall have regained full health.

The injured limb is shortened nearly one inch and a half. The curvature of the limb inwards is only slight, but to overcome this tendency as far as was practicable, an outward splint and a roller were, during the progress of the case, used for a time, but are now laid aside. The application of bran is still used alone, with the exception of a roller gently applied over the whole limb, from the toes to the groin, intended to counteract the disposition to œdema, that has been particularly observed since the discontinuance of the pressure used during the application of the outward splint.

Having thus presented, for the sake of perspicuity, a connected view of the leading features of the case, as regards the wound itself, it will finally be proper to notice the sympathetic disturbances of the

system, induced by so extensive an injury, and to give a general view of the treatment pursued in consequence of such disturbances. As in this case tetanus was particularly apprehended, in the commencement, it was deemed proper to guard against it by the repeated exhibition of opium, so as to keep the system in a measure under its influence; and after all danger of tetanus had passed over, it was still exhibited for some time in sufficient quantities to mitigate the irritation which the wound was calculated to produce in the body generally, and more particularly to enable him to rest well at night. During the first three days a symptom occurred of rather an alarming nature, as it was uncertain whether it might not be the forerunner of confirmed tetanus, but it may be doubted whether it should not rather be attributed to the prostration consequent upon the hæmorrhage from the wound, than to the irritation upon the nerves at the seat of injury. During the time specified, the flesh or tendons at the wrist were observed to be affected with subsultus, but fortunately on the fourth day this symptom disappeared, and was not noticed afterwards.

The sympathetic fever that occurred after the accident, was at no time of a very intense character, and hardly demanded any thing more than an attention to the state of the stomach and bowels. After copious suppuration had taken place, it considerably abated, and by the thirteenth day it had decidedly subsided, though some irritation still existed, and which has more or less continued, until the present time, as has been all along manifested by the too great frequency of the pulse.

The sympathies of no part of the system, with the wound have been greater than those of the digestive organs, particularly of the stomach. During the first two days, it ejected almost every thing that was taken into it; afterwards it became more settled, but still, for a considerable time, it would occasionally eject its contents. The appetite, though it remained feeble for a long time, yet after the suppurative process took place, it more manifestly improved, and had become tolerably vigorous, when it became almost entirely subverted during the continuance of a diarrhœa that supervened and which will be presently noticed. During the first six weeks, the bowels were obstinately costive and were hardly ever moved, except in consequence of the administration of an injection, or of some laxative medicine. This torpid condition of the bowels, no doubt extended also to the other abdominal viscera, as the liver and pancreas. In the interval above mentioned, colicky pains in the abdomen, of a very severe nature, accompanied by a tympanitic condition of the bowels

as well as costiveness, were upon two different occasions, the seventeenth and twenty-first days after admission, experienced, but subsided shortly after free evacuations had been obtained by injections, and the administration of anodynes. About the first part of the sixth week, the diarrhœa alluded to previously, occurred, and it continued, more or less, for upwards of two weeks, or until the latter end of October. It had a very decided effect over his general health. The powers of the stomach became greatly enfeebled, nutrition much impaired, and very great emaciation induced; in fine, our patient was brought almost to the very verge of the grave. From the character of the discharges, it was very apparent, that the irritation affected not only the bowels, but also the liver. The means used for counteracting the diarrhœa, consisted principally of castor oil, alone or with laudanum, given internally, of antacid astringents with laudanum, and of demulcent anodyne injections. Since the first of November, his bowels have continued, generally, in pretty good order, and his digestion has gone on as well as could have been expected. His limbs are still small, though not near so much emaciated as they were, in consequence of the diarrhœa. His general strength is increasing, and for a month past he has been able to sit up, and to be moved about the ward, in a chair with wheels attached to it: the weather not permitting him to be taken into the open air, as it has been very disagreeable for several weeks past.

Hospital, 31st December, 1827.

ART. XI. *Observations on the inefficiency of the cathartic powers of Rhubarbarine, with some Remarks on the different varieties of Rhubarb.* By GEORGE W. CARPENTER, of Philadelphia.

THERE is perhaps no maxim more generally admitted, than that "there is no rule without an exception." Among the discoveries and researches in the various departments of arts, science, and manufactures, there is occasionally found one which, (either from being overrated by too hasty an observation, or defective from difficulties in the manufacture or construction,) fails to support the characters assigned to it by its discoverer, or by those who may have described it. When an instance of this description is discovered, any one having full evidence of the fact, should consider it his duty to point out the error.

Vegetable chemistry has added to our materia medica a catalogue

of highly useful and important remedies, among which stand conspicuous, quinine, cinchonine, morphine, strychnine, cornine,* piperine, &c. all of which have continued after a full and extensive trial to support the characters originally assigned them, with the exception of *one*, which is the subject of the present communication.

Disagreeable as it is for me to criticise the writings and discoveries of men, eminent in the profession, yet for the promotion of science, and the propagation of truth, I shall not hesitate to do so, and feel confident that in this I shall meet with their approbation, inasmuch as the error was altogether inadvertent, and their object exclusively, to give the article its true and real characters.

A chemical principle discovered by M. Pfaff, and also prepared by M. Nani, a distinguished chemist of Milan, has been obtained from the rheum palmatum. M. Nani denominated this principle sulphate of rhubarb, which name it still retains. M. Nani reports the article to be cathartic in doses of a few grains, and to possess many advantages over the rhubarb, from the circumstance of its possessing an uniform activity, while the different kinds of rhubarb have qualities so various, that in many cases the ordinary doses are very uncertain, &c. &c.†

From the high commendation of this medicine, I was induced, at the instance of several of the faculty of this city, to prepare some of the article, as there had not yet been any received in this country. I accordingly adopted a process founded on that of Nani, but with some modifications, and published my formula with observations in the Philadelphia Journal of the Medical and Physical Sciences, and in Silliman's Journal—from which it was translated and inserted into the Bulletin des Sciences Medicales, for April, 1826, with some editorial remarks. Although I feel bound to acknowledge that I was the first to introduce this article in Philadelphia, and have sent a considerable portion to physicians in different parts of the United States, I must say, in justice to myself, that my province was exclusively confined to the preparation of the article—its modus operandi was submitted to the judgment and experience of those who were engaged

* It is much to be regretted that the cornus florida should yield the cornine in so minute a proportion as to prevent the discoverer from supplying the demand. This medicine has uniformly supported the character and description given by my friend, Dr. S. G. Morton, and the author can produce testimonials of the highest authority from different parts of the United States corroborating this statement, and furnishing additional proofs of the efficacy of the cornine in the treatment of intermittents.

† See Bib. Univer. July, 1823, also Silliman's Journal, vol. 7, page 385.

in the practice of medicine. My paper went to press early after I had prepared the article, and before I could collect sufficient facts to justify any conclusions as to its effects in the hands of those who had first employed it in this city; my observations, therefore, in relation to its virtues were upon the authority of M. Nani, and although modified a little, and commending less its cathartic energy, were, nevertheless, greater than it merited, and further experiments have warranted.

The physicians who first employed this medicine were so disappointed with its activity, that I was apprehensive of having failed in some part of the process for its manufacture. I therefore prepared it with great care several successive times, both according to the formula of Nani and my modified process, but with the same result; in order to prove positively there was no defect in the manufacture, I sent to Paris and procured it of the manufacture of PELLETIER, which was found to be equally feeble, if not more so, than that which I prepared—proving beyond question that the powers of the rhubarbarine had been much overrated. That manufactured by Pelletier required a larger dose than the extract of rhubarb prepared according to my formula in the Philadelphia Journal of the Medical and Physical Sciences. I have taken several times twenty grains and upwards without its producing a cathartic effect.

The rhubarbarine resembles more an extract than any of the vegetable principles. It is solid, dark brown, opaque, possessing the odour of rhubarb, and a taste slightly nauseous and bitter, it is deliquescent, and very soluble in water, alcohol, and æther. I cannot consider this to be the active principle of rhubarb, as a considerable portion of cathartic matter is retained by solution in the water, from which the rhubarbarine is precipitated. The term sulphate of rhubarb is an extremely improper application, as there is no sulphuric acid in its composition. The sulphuric acid first employed in the acidulated decoction is entirely decomposed by lime with which the rhubarbarine is precipitated perfectly uncombined with acid, it is then taken up by alcohol, separating it from the sulphate of lime. The alcohol containing the rhubarbarine is then evaporated until the latter is obtained in the form above described. It is evident therefore, that from this process there can be no sulphuric acid in its composition, and that the term sulphate of rhubarb is not applicable. I several times used the term in my former paper, as it was originally bestowed up it, and its use was sanctioned by custom and authority.

The process for manufacturing the rhubarbarine is expensive, and the product small, which renders it as costly as the sulphate of

quinine, it is therefore particularly important that its true properties should be made known.

The rhubarb of commerce differs materially in activity, and great deception is practised in selecting and artificially preparing the roots, so that the same species will frequently be sold for East India, Russia, or Turkey, and command corresponding prices.

Four varieties of rhubarb are indigenous and cultivated in France, viz. the rheum palmatum, compactum, undulatum, and rhaponticum. The superiority, however, of the palmatum, has caused the cultivation of the others to be neglected or abandoned. The difference between the activity of the French and English rhubarb, and that of China and Turkey, is caused by the age of the root; the former after three years growth decaying in the ground, while the latter are not taken up until the seventh or eighth year of their growth. The China and Turkey rhubarb grows without culture in almost any situation; the French and English requires a moist soil and a particular degree of exposure, and also considerable attention in cultivation. The former possesses a colour more fixed, a stronger odour, and a taste quite aromatic and slightly bitter—the latter, a taste more mucilaginous and herbaceous, and evidently a less degree of strength. From chemical analysis, first made by Mr. Henry, and afterwards by the celebrated M. Caventon,* we find that one hundred parts of China rhubarb contain seventy-four parts soluble in alcohol and water; a like quantity of the cultivated rheum palmatum furnished but sixty-four, the compactum but fifty, the undulatum but thirty-two, and the rhaponticum but thirty. Thus the rheum palmatum is proved to be the most active of the indigenous species, but is inferior to the China. It is proved that the strength of the indigenous rhubarb increases with its age, but as it cannot, from circumstances already quoted, attain the age of the exotic, it never can equal it in strength. Numerous experiments made by Dr. Geoffroy, M. Itard, and M. Ribes, in several public institutions of France, prove that the indigenous rhubarb is purgative, and may be substituted for the exotic, in pharmaceutical preparations, by employing one-fourth more than the latter.

* Bulletin des Sciences Medicales, Avril, 1826.

ART. XII. *Cases showing the Efficacy of the Volatile Alkali in the Bites of Venomous Snakes.* By I. MOORE, M. D. of Scrogy, Miss.

MORE than twenty years ago, I came to the knowledge of this remedy, and residing in a country abounding with venomous serpents, I was soon afforded an opportunity of testing its virtue.

The first case which occurred was in the month of July, 1807, in a very large, strong, healthy negro man, aged about twenty-five years. A very large rattlesnake had struck him twice on the top of his foot. I arrived one hour and a half after the bite; I found the patient lying in his master's gallery, with the dead snake at his feet, so that there could be no doubt of the species of serpent which had inflicted the wounds. He complained of violent pain in the foot and ankle, and the swelling had by this time advanced as far as the small of his leg, which he had encircled with a very tight bandage. I ordered the bandage to be removed immediately, and permitted the swelling to progress, which it did with great rapidity. I ordered the wounds, (which had bled freely,) to be well washed with warm water, and applied a pledgit to them wet with the volatile spirit, and at the same time gave him a tea-spoonful in a wine-glass of cold water internally. The pain continued without any abatement, and the swelling advanced rapidly up the limb for an hour; at the end of which period, I repeated the same dose, and made a fresh application to the wounds. In half an hour he declared the pain had entirely abated, and the swelling, which by this time had progressed above the knee, was arrested and went no further—in a few minutes the patient fell asleep. I then left him with directions if the symptoms recurred to call me again—if not, to apply a bread and milk poultice to the wounds at bed time. I found him next day free from pain, and the swelling almost entirely subsided. The wounds suppurating, I directed them to be dressed with basilicon, and in three days he returned to his usual labour.

The next case which I shall select, was of an African negro man, of low stature and strong constitution, about thirty years of age. He was bitten on Sunday morning about ten o'clock on the wrist by a mockasin, which from my experience, I pronounce much more venomous than the rattlesnake.

A variety of remedies were resorted to, for in this country almost every old woman has her weed for the cure of snake-bites; and this

poor fellow had been well plied with green plantain juice, sweet milk, sweet oil, gall of the earth, poplar root tea, &c. &c. I was called in on Monday morning early, about twenty hours after the injury. The wound presented a raw surface as large as a dollar, and was discharging a thin yellow sanies almost in a stream.

The limb was swelled to the utmost possible stretch, was livid, and so painful as to produce a loud shriek from the sufferer whenever it was moved. The pectoral muscles were also swelled, and sore to the touch, the face was tumid and shining, the tongue enlarged, and deglutition difficult. He was occasionally faint; the pulse obscure and intermittent, with constant nausea, and occasional vomiting. His arm was enveloped in a poultice of roasted onions from the wrist to the shoulder.

I ordered this poultice to be removed, and the arm well washed with warm water, and applied a pledgit to the wound wet with the spirit, and at the same time exhibited a tea-spoonful by the mouth in a wine-glass of cold water. I waited impatiently half an hour, and perceiving no abatement of the violence of the symptoms, I repeated the dose and renewed the application to the wound. I now watched him an hour by my watch, when he acknowledged he felt a little *easier*. I then repeated the dose, and renewed the application to the wound, and in less than half an hour I had the satisfaction to hear him declare he was free from pain—from this time he only complained of the stiffness, soreness, and weight of his limb. The constitutional symptoms did not again recur, the swelling of the muscles gradually subsided, and I saw him again in the course of three or four days, with nothing remaining but a small ulcer, which was soon healed by the ordinary applications.

The third and last case which I shall describe, was a negro boy, one of my own slaves, eleven years old, strong and healthy. He was bitten on the top of the foot by a small mockasin which was concealed in a bunch of briars. I saw the snake bite him—he drew up his foot, and said a briar had scratched him. I ordered him to the house without apprising him of what had happened—my reasons for concealing from him what had really happened, was that it would afford me an opportunity of judging whether the excessive perturbation generally evinced by persons bit by snakes has any share in aggravating the symptoms.

On reaching the house and examining the foot, I found two little scratches, with a single small drop of blood dried on each. He now, (about fifteen minutes after the bite,) was crying with the pain in his

foot, which had begun to swell. I washed the wounds, applied the remedy externally, and gave half a large tea-spoonful internally. The swelling progressed rapidly up the limb, and the pain became more violent. In half an hour I repeated the dose, and renewed the application, and after watching him for another hour, I had the mortification to find all the symptoms aggravated. I now gave him internally a tea-spoonful of the spirit as before, and waited another hour without perceiving any good effect. By this time the swelling had progressed almost to his body, and the pain was excruciating along the whole limb. I now repeated the dose, still confident in the remedy, but after waiting another hour, the limb was swelled to the utmost possible extent; the abdominal muscles became enlarged and very sore; he complained of a sense of stricture across his breast; his extremities became cold; his pulse imperceptible at the wrist; the whole body covered with a cold clammy sweat, and his respiration quick and laboured.

It was at this stage of the case that I suspected the quality of the medicine. I despatched a messenger instantly to my friend, Dr. Leybourne, who sent me a bottle of the spirit which had never been opened. I gave the little sufferer a large tea-spoonful, and repeated it in half an hour. It was with great difficulty he swallowed the second dose, but I had the gratification, in thirty minutes afterwards, of witnessing an astonishing alleviation of the patient's sufferings, the pain gradually subsided, his breathing became natural, the circulation was restored, his body and limbs became warm, and in a few minutes he fell into a sound sleep: he awoke entirely free from pain, the swelling gradually subsided, and in a few days a small sore at the seat of the bite only remained.

Fourteen other cases of the bites of rattlesnakes and mockasins, in which the character of the serpent was positively known, have been treated under my own eye within the last twenty years, in all of which the symptoms, mode of treatment, and results have been so similar, that a recital of them would only be a repetition of what I have already written.

As every thing depends on the quality of the medicine used, I will only add, that which I have used for fifteen years, I have obtained of Mr. Charles Marshall, Druggist, Market street, Philadelphia. It is a limpid colourless fluid, which he marks *Liquor Ammoniæ Fort.* I would recommend practitioners to order it put up in two ounce phials, sealed. When sent out in pint or quart bottles, every time it is opened, it parts with more or less of its ammonia, becomes

carbonated, and hence inert and useless, as was the case in that which I used in the third case recited, and which had very near proved fatal to the little patient.

Art. XIII. *On the uses of the Lymph.* By James Moultrie, Jr. M. D. of Charleston, S. C.

AMONG the phenomena which the operations of organic life are constantly presenting to our view, none seem more calculated to excite curiosity, than those which attend the formation and uses of the lymph. Setting aside the adhesive and disorganizing effects which are daily attributed to the proneness of this fluid to become itself organized, wherever it is lodged; there are few which seem to be so little understood, and in the investigation of which our labours have been crowned with so little success. It would be tedious, and perhaps useless, to consider all the different hypotheses which have been advanced upon this subject. The mistakes which have been so long current in the world, about this part of our constitution, as well as the light which recent discoveries in anatomy and physiology have thrown upon it, will justify me, however, I hope, in prosecuting the inquiry a little further; more especially in relation to those phenomena, which appear to depend upon the combination of it with the chyle in the thoracic duct.

A minute examination of the œconomy of nature evinces that all her movements in sustaining the organization of animals is gradual as well as progressive. Every step which she takes, either in production or regeneration, it is true, is manifested by change; but every change, it is equally true, is the direct result of that which preceded it, as it is the immediate forerunner of that which is to follow. Every part is mutually and reciprocally dependent. Nothing is abrupt and unconnected; and in the entire series of living manifestations to which each individual body gives rise, none are so constituted as not to appear as the increasing and necessary effect of a continuous train of organs and functions, which have been put into action for some common end. In the regular and progressive series which constitutes the whole *organic* existence of each individual, no part can be omitted without bringing that existence to an immediate close, or materially impairing the continuity by which it is preserved. And to apprehend the different steps of the process, and ascertain the links by which

they are severally bound, each must be separately investigated, and singly and jointly understood.

Viewed in this light, the subject under consideration is peculiarly defective; and while other functions and formations have been investigated with a precision and scrutiny approximating to philosophical accuracy, this has been generally overlooked, and passed by with a degree of apparent indifference, not easily reconcileable with the refined inductions of modern analyses. While chymifaction and chylification are thus comparatively comprehended, the combination of the lymph with the chyle has hardly elicited attention; and little is therefore known of the reason for their meeting in the thoracic duct, or the relations which they subsequently maintain in the circulating system. To supply this deficiency is the object of the present paper; and in endeavouring to do this, I shall not rely so much upon the development of new facts, as upon the new relations in which I propose to place those which have already been discovered.

It is now long since the lymph, or that fluid which is found in the lymphatic vessels, was regarded as a heterogeneous combination, composed of alienated materials of the solids and fluids, which, having served a turn in the nutrition of the body, was now on its way to the emunctories of the system, and there to be resigned to the laws which govern inorganic bodies. The investigations of a more improved physiology, have, however, opened to us new views upon this subject, and in the course of the following speculations, we shall see good reasons for believing, that so far from partaking of this effete character, it is of a highly vitalized and assimilative nature, the ultimate result of many elaborative actions, and destined like the blood, to be again and again circulated, and employed in supporting the integrity and increment of the living edifice. In the meantime I would merely observe, that the influence of the former hypotheses in keeping up our erroneous notions respecting it, is obvious and inevitable; and there is little doubt in my mind, that it has contributed, as much as any other circumstance, in promoting and preserving that obscurity by which our progress towards a knowledge of its true origin, nature, and destination has been so long retarded.

Assuming for the present the truth of the latter hypothesis, in comparing this fluid with the chyle, we are forcibly struck with three circumstances: 1st. The relation of contrast which they sustain: 2d. Their immediate union, nevertheless, in the thoracic duct: And 3d. The intimacy with which they are afterwards united with the residuary blood of the system, and distributed throughout the body.

In examining these occurrences according to the natural order in

which they arise, we have presented to us a catenation of changes and modifications, which from the uniformity and apparent mutual dependence which they exhibit, awaken in conformity to a law of the understanding, that universal conception of relation, to which in analogous instances has been appropriated the phrase "cause and effect." Now in tracing out the different stages of this catenation, and describing the phenomena of the sequence, in the doing of which consists the very act of philosophizing, we have incurred one of the only two fallacies, to which, according to a late celebrated writer, every system of philosophizing is liable. Nothing it is true has been *added* to make the catenation complete, which does not really belong to it; but a part of the sequence has been *omitted.* The statement of which is an essential part of it, and in which our labour now chiefly lies. Books on physiology are ample enough in their descriptions of the phenomena of chymification, sanguification, &c. but greatly defective in their accounts of the changes which are produced by this conjunction in the receptacle or chyliferous duct, and the inductions which depend upon a consideration of the prior and posterior circumstances attending this event, seems never once to have occurred to them. In their ardor for system-making, this has been wholly overlooked; and without the patience of protracted observation, they have passed at once, in a single leap, from an examination of alimentary digestion, to treat of the phenomena of sanguification, aeration, &c. In this particular, silence is nearly profound, and it seems to me, is either attributable to the erroneous views which have hitherto been entertained of the functions of the lymphatics, or the still more erroneous belief which was held concerning the character of the lymph. But to proceed—

The lymph, according to our assumption, and the acknowledgements of the present day, is a highly animalized fluid, fully endowed with the principle or property, which ever it may be, of life.

The chyle, on the other hand, anterior to its admixture with the lymph, is a *non*-animalized fluid, possessing none of those unequivocal manifestations which entitle it to be considered as vivific.

These *vital* and *non-vital* fluids enter into direct combination in the thoracic duct, to which they are carried by their respective vessels, and are afterwards more intimately combined as they are circulated through the heart, lungs, and capillary vessels.

Previous to this combination they maintained their respective characteristics; the former, like the arterial blood, which it is said strikingly to resemble, being uniformly homogeneous; the latter, like the materials out of which it is formed, as uniformly the reverse.

After it, however, their individualities seem no longer to exist, and their relations become materially altered. A new product is formed, complicated of each of them, is admitted into the body, circulated in its vessels, made to harmonize with its susceptibilities, and hourly supplies the common pabulum, by which its wants and necessities are satisfied. The lymph, insusceptible apparently of a higher change, is still separable from the state of combinedness into which it is placed, but the chyle being materially altered, is no longer distinguishable, and except, perhaps in some instances where this process has been incomplete, and assimilation therefore imperfect, is no longer to be reclaimed, nor to be discovered in that state of primordial individuality, which belongs to its chyliferous origin, it has in fact acquired new properties and new relations, and being essentially vitalized, bids defiance to all the known energies of our chemical and physical expedients.

If any two fluids, as opposed as these are in the possession or negation of the principle of vitality, had been suddenly brought together in a capacious reservoir—like the stomach, or bulging conduit—like the duodenum, instead of being silently transmitted, and gradually combined in so recondite a receptacle or tube—as is the thoracic duct; and their incorporation observed to be followed by a change so immediate and remarkable as that from inanimation to vitality, and the whole experiment conducted in such a way as to exclude, with the like hermetical closeness, every thing calculated to disturb the regularity of the process; is there a doubt but that some final cause would have been found for this contrivance, some positive use been attributed to the former, or the change effected in the latter been ascribed to the assimilative agency of the former? There can be little doubt, I think, that the phenomena would long ago have elicited observation, and the results satisfactorily explained. And yet, upon a review of all that takes place here, there appear to be no ideas forming this relation of the union of the lymph with the chyle, which do not also form that of the union of the gastric juice with the food, or the chyme with the bile, or the venous blood with the air in respiration; nor is there any thing which suggests to our minds, the belief of the relation of cause and effect in the one, which does not also in the other. We say, without hesitation, that the mixture of the gastric juice and matter of alimentation forms the chyme; the chyme and the bile, the chyle, &c. And why? It is evident that it is because the events follow one another in a train of priority and sequence which our minds are so constituted as thus to apprehend. And why not then, that the mixture of the lymph and chyle form another product, the

nature of which is so different from either of its constituents before combination? or since the nature of the chyle has been changed, and an inorganic has been converted into a living fluid, that it is the province of the one which possesses vitality to impart it to the other which does not? If there is no difference in the relation which they severally manifest, there can be none in the inductions to which they lead; and there can be as little reason for suspending our confidence in the rules of philosophical criticism in the one, as in the other. The occasions are the same; the connections are the same; and the inference is precisely the same as that to which we have frequently before given our unreserved assent. It is of little consequence, really, how the manner of stating it is managed, provided the phenomena are brought into view in the precise order in which they arise: whether by a simple enumeration of all the prior and subsequent conditions, or, as in the case before us, by ascribing to the menstruum, which is *first* in possession of the quality to be imparted, the efficacy of a cause, and thus to confer upon it the natural agency of being instrumental in transmitting it to that which is *last*. Viewed in this light, one of the most important of its uses is undoubtedly that of animalizing the chyle, and preparing it for those ulterior depositions which it is destined to undergo. But the truth of this opinion will beget further confidence, when the facts and arguments which remain yet to be adduced shall have passed under review. In the mean time, however, I cannot avoid noticing the entire correspondence of this relation, with that of the order which connects, by a similar principle of association, the events of the moral and physical universe.

To those who have not minutely reflected upon the spirit of the inductive philosophy, it might be thought necessary, in order to establish the truth of this opinion, that I should prove the lymph to be possessed of a *superfluous* quantity of life. It is evident, however, that such a requisition implies an impossibility, and is, therefore, illegitimately assumed. As we are ignorant of the nature of the living principle, it follows that any endeavour to discover, or to form a conception even of its supposed action in imparting and receiving, must be altogether futile; for it cannot be measured or apprehended by the ideas of quantity and metastasis which our understandings derive from reflecting upon the mutations of matter. It may be observed, however, in relation to those who may think the proofs of this redundancy an important preliminary, that I know of no way of affording it, than by referring them to the very manifestations, for the production of which the proofs of that redundancy are required. It

is in this way only we are able at any time, to prove a necessary redundancy on the part of the parent to procreate his oft numerous progeny; of the embryo itself, to grow to the magnitude of the newborn animal; or of this last, to attain the powers and developments of ripened maturity; and the error upon which this mode of reasoning is founded, becomes still further evident by a simple recital of the absurdities to which it leads; for upon this principle the atmosphere must also abound with it, otherwise the more exalted vitality of the arterial blood than the venous, must also be shown to depend upon some other cause than that simply of respiration; and even this required redundancy itself, whenever and wherever established, must be proven to depend upon some other previous redundancy of underived excess, existing in time and space, where our requisition must ultimately stop.

Very different is the nature of the question in relation to the qualities of that fluid. The effect which the doctrine of its effete character, and that of the absorbent agency of the lymphatics, have had in keeping out of view the phenomena now under consideration, and the intimate connection which the solution of these phenomena has with that of the hypothesis assumed, render it necessary that these doctrines should be subverted, and that this last should be established upon the most unequivocal basis. Notwithstanding the instances in which foreign articles have been found distinctly intermixed with the contents of these vessels, the opinion, I am disposed to think, is susceptible of the highest degree of presumptive reasoning, as well as of experimental elucidation, that the lymphatics are not the *natural* absorbents of the system; and that unmolested by artifice or disease, they are not *habitually* concerned in the daily decomposition of the body, or in the removal from it of any of its worn out or superfluous particles. Of all the changes of opinions which the lights of recent experiments have produced, none I apprehend, are so likely to be universally and irrevocably fixed, as that which regards this function as the exclusive and *healthy* office of the veins. Of the whole number of experiments which have been instituted for the purpose of trying this question, it is not among the least remarkable of the result going to establish my position, that so few exceptions have occurred wherein any of the substances used have found their way into these vessels, while nearly all of them have gone directly to establish the fact, that the veins and not they, are the appointed performers of this tributary work. And while this belief is in this manner directly supported by the fact, the opposite doctrine is contravened by the fact also, that the lymph throughout the system is always of a homo-

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geneous nature, and not that heterodox of particles, which the older supposition imagined. It is on the contrary so nearly allied to arterial blood, particularly in that of its identicalness, as with difficulty, except in colour, to be distinguished from it; and like it will be found to be subjecting itself to the laws of the vital chemistry once again, to subserve the ends of nutrition and being. Upon the idea of its complicated derivation, we should have a right to expect directly the reverse of this to obtain; and as the particles are ever receding from the control of the vital energies, from their first entrance into the radicles of these vessels, and proportionally losing the ability to preserve their homogeneous affinities, to see them manifesting like the unassimilated chyle, the crudities which attend the diversity of its origin. The vitality and homogeneity, however, which under all circumstances it retains, leave us no other inference, as long as past exrience shall continue to be the guide of our present and future speculations in physiology, that these are characteristics which could only have been acquired by the most elaborate operations of organic life; and declare it in terms the most unequivocal, that it must have passed simple or combined, once at least through the lungs. Whether or not this unvarying character extends into the minutest ramifications —or seeing that the lymphatics extend far and wide throughout the system, and that each radicle has an appropriate destination, whether or not it is first adulterated with the matter of decay taken from each neighbouring territory, and then instantly cleared from this pollution by the filtering processes of the glands, or whether in the performance of this filtration there are two sets of vasa efferentia, the one destined to carry the heterogenous matter to the veins, the other to the lymphatics, is not material to the question. The proposition stands which ever of these may be adopted: if the latter, perhaps, it is the more confirmed, since from it may be inferred the early and particular care, which seems to have been taken in preparing it for the end which has been assigned it. Supposing this distribution of vessels to be correct, would it not be proper to consider the former set of vessels as appendages to, or radicles of the veins, rather than lymphatics? and is not this inference warranted as well by the nature of their contents, as that of their terminations? as the arteries have different terminations than those which end in the veins, so from analogy, the veins may be expected to have different origins than those which begin in the arteries. Where the structure is so minute, and the intertexture so intimate, our investigations must necessarily be attended with great degrees of incertitude; and where differences are to be assumed upon the inter-

mixture of colours, we cannot be too cautious how we rely exclusively upon them. Among vessels, as minute and translucent as the early lymphatics, one would imagine it an easy matter to mistake the reflections of neighbouring vessels for hues intrinsically possessed, or supposed to be possessed by them; and to believe a modification of colouring to exist where it in fact does not. We know that our own countrymen, LAWRANCE and COATES, were nearly imposed upon in this very way, in one at least, of the experiments which they had been engaged in performing with colouring articles on the lacteals; and I think their supposition of the manner in which Mr. JOHN HUNTER may have been deceived, and thus the reports of MAJENDIE come to differ with his own, by no means improbable. If then a deception can arise where the anatomy is appreciable, or can be made so to the moderately assisted eye, how much more readily may it, where the difficulties are so much greater? One thing which heightens the probability in this instance is, that if the lymph and excretory matter are contained in the *same* vessels *before* filtration—as the *vasa efferentia* are not only less numerous but larger than the *vasa inferentia*, and the colouring matter must consequently be deeper *after* separation than *before* it, the eye being keen enough to discern it in the former instance, ought more readily to have discerned it in the latter. Now my recollection does not serve me to say whether or not this is the fact; but if it is so, the inference is so obvious and necessary a one, that its not being noticed may be assumed as a presumption that it does not exist. When we remember that the volume of blood which is created in the lungs is not destined to remain therein —that the unvarying purpose of *healthy* respiration, is to *get rid* of the carbonaceous principle—and that the *proper* vessels of nutrition are not larger nor more numerous in the lungs than other structures, the powers of composition and decomposition being here balanced as elsewhere, no reason can be found why upon this principle the absorbent vessels of the lungs should more abound with this matter than those of other organs; and it seems hardly probable that an effect differing so much in intensity here, from what is found to prevail throughout the whole of the system, should be owing to a cause not universally present. If it was the *particular* office of the lungs to secrete carbon, then the black matter which is found in the said vessels, here, may properly be ascribed to the alleged cause, but as this is not the fact, any more than the skin, or that tissue in which it first makes its appearance, this instance cannot be referred to as an example or evidence, in which each lymphatic radicle absorbs from a neighbouring tissue as from a territory of its own, the matters it con-

tains. And with regard to the bilious discolourings of the lymphatics of the liver—another of the most remarkable of the instances which have been supposed to establish the theory—besides that the manifestation of the presence of bile is not stronger in the blood of the hepatic veins or ascending cava, than that of the rest of the body—it may be inquired if the phenomenon seems to be a natural one, that a fluid which is ostensibly formed for *reproduction*, should at the same time be treated as *excretory*, and as such be taken up by agents whose acknowledged, and I would also add exclusive office it is to be concerned in this matter? The fluid in the *inferential* vessels, according to this hypothesis, is a product of the *proper lymph*, and the *cast off* molecules of the neighbouring tissues; now the bile in the *hepatic* inferential lymphatics, must, according to this view, be the *cast off* molecules likewise, otherwise the example does not apply; and if it does, then are we presented with the anomaly, of a fluid being at the same time both secretory and excretory. And may not the same reasonings be applied to all the other examples which have been so variously adduced? Majendie has said that the lymph is the same throughout the system, whether taken from a lymphatic vessel or the thoracic duct, and if in addition to the foregoing remarks, it is also remembered that it is an animalized fluid, the distinct formation of a distinct formative power, I think his opinion will be found to remain unaffected, notwithstanding the ingenuity of the ratiocination, by which its heterogeneous and diversified origin has been attempted to be established.

If we examine the œconomy of the veins, we shall find the reason not less cogent for believing in the doctrine of their exclusive absorption. To fulfil the purposes of nutrition, the blood must be liberated from every thing like adventitious mixture. Upon this necessity is apparently founded the institution of the depurative processes. The black blood contradistinguished to the red and the lymph, is not only more complicated in its nature, but, from the relations which it bears to these fluids, and to that of the secretions and excretions of the body, is at the same time by far the most liable to depuration from foreign admixture. Hence it may be expected, in the course of its circulation, not only to give rise to the most diversified of impressions, but under certain contingencies, to prove the most deleterious in its effects. To guard against the inconveniencies of the first, and to provide a remedy against the last, the vessels in which it circulates are endowed apparently with a modification of susceptibility, which is not less distinctive and characteristic than that which belongs to any of the specific tissues. By this their minute branches are ena-

bled not only to take up every thing which is destined to be absorbed, but the very articles even, with which nearly all the physiological experiments relating to absorption have been conducted, and to bear with impunity, for a while at least, the varied actions of the diversified agents, to which they are normally or inopportunely exposed. They are also better qualified for the task of doing that which was ascribed to the lymphatics—removing the superfluities of nutrition, or the excesses of morbid increment. To this modification of vitality may also be ascribed their protection against an agent of known and admitted fatality, and their general adaptation as reservoirs for containing, until they can be removed from the body, the many materials, natural and adventitious, which, under a diversity of circumstances abide within them.

But as much of what has been said is predicated upon the homogeneousness of the lymph; and as this is a property, which, under the exceptions intimated, belongs also to the blood of the veins, a question may arise as to the validity of the opinion, that the exonerated particles of nutrition do find their way into it, and become one of its constituents. The answer to this inquiry is involved in that of another, and is intimately connected with the explanation of it, viz.: what is the nature of the process by which the carbon, which abounds therein, is generated, and the true relation of that substance to the animal organization? This question is an interesting one, but notwithstanding its apparent embarrassments, I am not without some hope of being able to approach its elucidation. To answer it satisfactorily, perhaps, ought not to be pretended; for to be able to trace the whole of the minutest changes through which the food of animals passes, from simple alimentation to elaborated secretion and excretion—and to point out the intimate and intermediate separations and reunions of its constituent principles, is what the most sanguine physiology can scarcely hope to accomplish. Analysis, however, has ascertained that it always consists of the four simple elementary substances—oxygen, hydrogen, nitrogen, and carbon; and we know, that after having undergone a variety of mutations affecting their chemical relations, they are again eliminated from the body, under divers states and modes of recomposition. May not the pulmonary transpiration then, be one of the modes of recomposition, in which the *oxygen* and *hydrogen* are eliminated? The cutaneous another? And the serosity of the urine a third? Is not the *carbon* itself, in fact, an exemplification, in which one of those constituents escapes in an uncombined state? And does not the highly azotised state of the urine justify us in believing it to be another of those exemplifications in

which the *nitrogen* is separated from the same? Ure says, on the authority of Dr. Berard, that "as urea and uric acid, are the most azotised of all animal substances, the secretion of urine appears to have for its object, the separation of the excess of *azote* from the blood, as respiration separates from it the excess of *carbon.*" And we are all familiar with the fact, that the quantity of moisture which escapes from the body, does not at all times bear a direct ratio to the quantity which is consumed. Under pathological circumstances, it is even greatly disproportioned; and this has been ascribed to cutaneous or pulmonary absorption; this we shall see some reason hereafter to doubt; and the phenomenon must therefore remain wholly unaccounted for, unless it be attributed to some such operation as that which is herein hinted at. And with regard to the *carbon* which so suddenly appears at its formative juncture, unless it be regarded as one of the modes of this elimination also; and its presence in the radicles of the veins received as evidence of a peculiar action in the capillaries, separating it for their reception, its existence must remain wholly insolved; and I must acknowledge my failure in attempting to reach what was proposed in the foregoing proposition. On any other ground, the sudden formation of so insalutary a principle is wholly inexplicable. From these data I should therefore infer that it is the chief if not the only effete matter, which the *powers of absorption* are, in the situations assigned, regularly interested in removing. The exact spot in which this action takes place, is wholly immaterial—whether in the veins, the capillaries, or, as it were, in transitu, and the mystery of the process is not greater than that of the formation of any one of the animal compositions. It is evident that if the œconomy of nature is able by means of certain organic contrivances to overcome the elementary affinity of our food, and to separate therefrom the previously unformed chyme, chyle, blood, bone, urine, &c. that it manifests powers which require but slight variations to make them fully competent to their revival, and consequent elimination in any of the states and modifications which have been stated. It is with the *existence* of the carbon, however, the *fact* itself, and the circumstances attending its sudden formation, and not with the *mode* or *precise seat* of its action, that I am now interested; and to these I would extend the inductive statements, which have already been applied to the commixture in the thoracic duct of the lymph and the chyle. The time and space in which this operation is effected, as in most other instances, is manifestly short, but the new relation in which it presents itself, is in perfect compatibility with the consecutive phenomena of respiration, and developes a connection

between them, which brings into perfect harmony the two extremes of the two great vascular systems. In whatever other light then the venous system may be viewed, its office, in this respect, is essentially residuary; and is strikingly contrastible with the tributary functions of the arteries and lymphatics.

Viewing the three systems under this relation, the circle of organic functions appears to be complete. Hitherto this has been unwittingly overlooked. The custom has been in tracing the successive series, to begin with the introduction of the matter of renovation into the stomach, and when we had proceeded through all its transitions to where the *direct* assimilative functions terminate, to rest satisfied with the success which seemingly attended us; hence the accounts of our progress thus far are regular and connected; but in returning to begin the series again, observation has been less minute in tracing the *indirect* to where former begin, and hence the accounts of our retrogression are entirely wanting. The true relation of the intermediate link remains unnoticed, and our march has been abrupt and made as it were by a bound. What adds corroboration to these observations is, that if the carbonaceous matter is not "ipso facto" the effete matter, nothing else is to be found in either of the two systems between which the disputed function lies, which can clearly lay claim to that denomination—nay, if its existence be not taken as the evidence of that absorption by which the opposite power of renovation is balanced, I know not by what other means that doctrine can be either exemplified or maintained. The truth of this opinion appears again, not only in the fact of its insalutary influence wherever it abounds, or whenever it is retarded, but in the extensive provision which is made for its direct and uniform removal. I am the more disposed to dwell upon this particular, because the truth of it appears to throw additional light upon the long disputed question relative to lymphatic absorption, and to explain some other phenomena which otherwise are totally inexplicable. Considering its now extraneous relation to the living actions of the tissues, the reason is seen at once why the tides of renovation and decomposition should be steadily balanced: if the carbon of the venous blood is the true matter of defœdation, as the chylo-lymphatic fluid is of nutrition, then is it obvious that the one must be regularly receding as the other is advancing; and this is what is actually found to be the case.

In accounting for its fatal opposition to the actions of the vital principle, it is usual to regard it as operating in a way which is wholly specific; but if it be of the nature which is herein supposed, are we not warranted in questioning this rationale, and in referring its effects ra-

ther to some more general law of the œconomy? Is it not indeed an individual exemplification merely of that universal rule, by which *all* foreign substances introduced into the circulation, become more or less insalutary? Being unassimilated or set free from a state of nutritive appropriation, the relation which it previously sustained no longer exists—its adaptation to life is lost—it has become relatively adventitious—the susceptibilities no longer tolerate it—and hence it can no longer abide within the body, except in a constant progress towards ejectment from this excretory reservoir without jeopardizing the sanity of the functions, or producing instantaneous death. Independent of its morbific incompatibility, its delay therein leads to a congestion, and standing in the way as it were, of the new supply of the blood of the arteries, it impedes and disturbs that easy and uniform movement of the solids and the fluids, in which the state of health may be succinctly stated to consist.

In the reduction of so large a proportion of the depurative matter to an elementary unit, much of that embarrassment is undoubtedly saved, which would have accompanied a more diversified excretion; and in the simplification of the process, by which this effect is secured, we behold another example of the determination to maintain without exception, the universal law of *determinate relations.* Every function manifests a double relation: one to the constitution of its organ, the other to its proper stimulus, as the structure is one, and the function is one, so is the stimulus usually one also; and it seems not unlikely that the apposite simplicity of the last in this instance has been modified in obedience to the foregoing principle. If this be the true relation of circumstances, the disparity in extent between the two systems is explained, and the reason is at once seen why the venous blood is so much more abundant than the arterial: the veins in fact are not only reservoirs which contain the relics of the arterial blood, which have not yet been assimilated, but of that of the solids and fluids which are to be excreted.

It is usual, I believe, with writers, in adverting to the difference of temperature between arterial and venous blood, to ascribe it simply to a manifested change in the capacity for caloric. That this change is implied in the difference is an acknowledged fact, for our minds are so constituted as to suggest to us in every change a capacity in the subject of it for change, as it does in that of every product the ability to produce; but this is only an implied condition, arising spontaneously from the knowledge of a fact. Now the question here refers not to the *capacity* itself, or the *ability* to produce, but to the *cause* of the change of capacity, or the *antecedent circumstances* which

have been instumental in producing it. The analysis of this phenomena goes a little beyond, therefore, what has been attempted, and endeavours, upon the strength of the preceding explanations, to point out the *prior* relations on which the change of capacity depends. It will be found, I apprehend, in the application of the foregoing views, and has an unvarying relation to some accident which is ever present in the one species of blood, and ever absent in the other. Instead then of searching for it in some remote law of vitality which has hitherto been undiscovered, would it not be more philosophic to look upon it as the immediate consequence of the formation and presence of a substance inorganically related to life—in itself incapable therefore, of generating caloric and being proportionally uninfluenced by the organizing principle, is, therefore, labouring under an increasing proneness to suffer its diminution. Anterior to nutrition, the vitality of the circulating fluids being strong, the generation of caloric is proportionally great; but after it, the same fluids being mixed with foreign particles which the vitality has ceased to control, the generation of it is proportionally weak.

Whether or not fancy has had any share in pushing these speculations beyond a legitimate limit, I cannot at present determine; but if they are found to be valid, may we not upon the same principle also, partly, at least, explain the coldness attending what has been called the congestive states of fever, and those analogous local affections, in which a similar inequilibrium of circulation is said to exist? From the slowness of respiration and the general torpidity of the skin, nothing seems more rational than to expect that their decarbonizing functions should experience a considerable depression; and where this principle is suffered to accumulate in quantities disproportioned to its escape, it seems equally rational to expect the very effects which are found to follow. The sensorial oppression too, which is a usual concomitant of this state of things, is another of the phenomena which I think is most easily accounted for upon this principle; and from the agency which the nervous energy has been shown to exert in the generation of animal caloric, furnishes additional testimony in support of the solution—the effect in this latter instance, however, is secondary and not immediate.

The excretory action of the lungs is universally admitted and very generally understood. But as their absorbent action is perhaps more generally received than definitely apprehended; and as the doctrine is incidentally connected with the principal object of this inquiry, I will take the present opportunity to make a few remarks upon it.

The air is the natural excitant of the lungs, and the grand medicine by which all new properties are therein imparted to the blood. All experiments relating thereto, show that although it undergoes a decomposition in the art of respiration, neither of its constituent elements are absorbed. The two other accidents usually united with it, are humidity, and a small quantity of carbonic acid gas: the absorption of the first is incompatible with the extent of pulmonary transpiration, and the last with the separation of carbon from the veins. With regard to the experiments which have been instituted with artificial gases and odoriferous substances, I confess myself not altogether satisfied that this is really the channel by which they make their way into the circulation; besides, that I have something to object to the individuality of the experiments, and the general nature of the inferences which have been grounded upon them; and these will apply, I apprehend, as well to the doctrines of cutaneous and lymphatic absorption. Every experiment is in itself individual, and if successful, establishes two positions: 1st, it proves the existence of the function, *under the circumstances given*, in the vessels where the substance experimented with has *directly* entered them; and 2d, it proves the entrance of the *particular* substance with which the experiment is made—and beyond this it establishes nothing. The experience which we derive from this individual discovery goes no further, and informs us not in the least in relation to the admission of other articles: the *general* question of absorption it leaves untouched. Each experiment and each substance speaks only for itself; for each tissue has its particular mode of vitality, and its particular relation to an excitant, by which alone its *normal* action is supported; and the abnormal are too indefinite, and depend upon too many contingencies, to allow of a *general* inference, where the proposition is purely physiological. No reliance is to be had in the determination of the *general* interrogatory, where each separate affirmation or negation must depend upon the success or failure of each particular experiment, undertaken with substances having no *healthy* determinate relation to the parts experimented upon; and where we artificially set up a train of phenomena which otherwise could not arise. If the stomach is revulsed by tartar emetic, or the same effect is produced by hernia or intususception, it does not follow that vomiting is a *physiological* operation of that organ, or an inverted peristaltic motion that of the whole alimentary canal. If a moderate quantity of water finds its way into the air-cells of the lungs, or any other substance which is not absolutely fatal from quantity or quality, it probably will be removed; but this in like manner does not show that when the lungs are not thus circumstanced,

one of its functions is imbibition from without. What is *artificially* and only *temporarily* induced, is no evidence of what is *naturally* and *permanently* taking place. Nutrition and absorption are functions which belong to all parts of a living body; but the absorption herein referred to, has nothing to do with the present question, it is interstitial and distinct from that which is supposed to add to the nutrition of the body by drawing upon resources that are external to it. In this latter respect they appear to be constructed upon a plan which is in perfect congruity with that of the skin, and to be destined to act in conformity to this latter organ, in the *elimination only* of excretory products. When compared with the muco-gastric and intestinal surfaces, they present a contrast which strikingly accords with the modern investigations of European pathology; and may be said in this particular, and the forced exceptions of which they are susceptible, to bear some resemblance to the polypus, the internal and external surfaces of which are said to be absorbent or eliminatory, according as their natural relations are retained, or the animal is *experimentally* inverted.

But if the acquisition of any additional property to the blood by the power of absorption is denied, and the act of respiration is simply confined to that of its decarbonization, it then remains to be inquired by what agency has the arterial blood acquired that greater vitality in its passage through the lungs, by which it is said to be eminently distinguished from the venous. That this is not a property which has passed into it from the atmosphere, is susceptible of absolute demonstration. That element, the motorial compound of two material inorganic substances, neither is endowed with the power to originate it, nor to add any thing to the *quantity* which was originally possessed. The question here occurs to us, however, is it the result of the *outward* chemistry and *physical* laws, or of the *inward* and *vital?* Little hesitation can be felt in replying to which of the two it belongs. Notwithstanding the experiments of Fray, Spallanzani, and Bonnet, in favour of the hypothesis of dissemination, I think it may be assumed, without incurring the allegation of a "petitio principii," that this effect must be sought for in some already existing provision within the precints of the organization, the agent of which being already vitalized, is qualified to produce it. "Life," says Cuvier, "is the product only of life;" and the occurrence of every vivific change, as well as of every organic result, in obedience to this principle, are the exclusive effects of the operation of it only. Physical agents may excite to a more perfect development of its manifestations, or derange them by rendering the organs incompetent to a display of its healthy

powers; but in this they neither evince any ability to beget, or to add one iota to the indivisible essence.

To what agent shall we then ascribe it? The determination of this naturally leads us to another of the properties of the lymph, which will come to be considered as we proceed. In the mean time it may be proper to see if the fact which is assumed really exists, and to be certain that the arterial is more living than the venous blood. For my own part I do not conceive that by the simple conversion of the one into the other, any thing has been actually *added* to augment the amount of it in the former. A foreign and useless substance has been removed, by which certain changes are suffered to arise, and it is to the negative influence chiefly of this removal in promoting a *vital concentration* of the lymphatic or fibrinous portion of the arterial blood, that I apprehend the phenomena to have its cause. Blumenbach observes in his physiology, that a variety of phenomena "demonstrate in a most striking manner, the superior importance of this lymphatic portion, in which the vital principle of the blood appears *immediately* to reside:" so that what has been considered an *accession* of vitality, is probably owing only to a closer play of the affinities, consequent to the removal of an element, which while present had the effect of opposing this vital concentration, and consequently of keeping the sanguineous molecules at a greater distance from each other. The effect, therefore, is one of the *inward* chemistry and vital laws, and not of the *outward* and atmospheric: it is the result of a property belonging in a particular degree to the lymph. As in the physical universe, the manifestations which therein arise, are referred to the powers of gravitation; and in the organic, those which are connected with the solids, to the laws of vital contractility, so in the organic likewise, those which are associated with the fluids must be referred to a modification of the same operative principle. Contractility in fact is a universal property of life; and in the tendency which it has towards a universal organic consolidation pervades both the fixed and moveable particles of the body.

The views which have been taken in the preceding parts of this paper, are strengthened by a consideration of the manner in which the lymph is formed, its nature, relations, and apparent place of origin. Anatomy teaches us that it is found, not sensibly diversified in veins, arteries, and lymphatics. In which of these does the function reside by which it is fabricated? Each originates and terminates in the others forming thereby a circle, in some part of which the above proposition requires to be located. 1st. Of the veins.—Is it formed in these? Their offices; the nature of the fluid which circulates in

them; and that of the operation which we have seen some reason for believing is carried on in their minute ramifications, are utterly opposed to this idea. In the order of time, the venous circulation is secondary to that of the arterial, and this together with the termination of the receptaculum chyli, and that of the divaricating lymphatics, show that the lymph which herein exists, is derivative solely. 2d. Is it formed in the arteries? From the termination of that receptacle, and the continuity with it of the pulmonic arteries and veins, it is evident that they, as well as the veins are indebted to this latter organ for its existence in them also. It is evident then, that in fixing the manner in which the lymphatics become possessed of it, I shall at the same time determine the proposition which is now under consideration. But hitherto we have moved only in a circle, and as these vessels are said to terminate in each other, it may be objected to, that as the arteries receive it from the lymphatics, so do the lymphatics receive it from the arteries. And yet it is evident that a fluid so elaborate could not have been formed at once; and that there is some tissue which is destined to provide it. The fact is, all of the arteries do not terminate in lymphatics any more than they do in veins; but some of them end, as do all the other vessels likewise, in that tissue which from it minuteness and great delicacy, has been called the capillary tissue. They communicate, it is true, but I believe that communication to be indirect. Whether that tissue be really vascular, or partially or wholly parenchymatous, is foreign to my purpose to determine. It is here, however, that the lymphatics arise; and it is here also that I conceive it will be found their fluid, in common with all the secretions of the body, is in like manner fabricated. Not, as our proposition imported, in either of the three foregoing systems of vessels, but in the parenchymatous or reteform structure, which either envelopes or constitutes the "minimum visibile" of our frames. Nothing but the interposition of this structure, and the necessity which results from the preceding review of locating this function here, saves us from the absurdity of supposing a physiological anomaly, viz. that of a fluid moving in a complete circle, having neither origin or termination; without any provision for the varying necessities of the body from infancy to old age; and without experiencing any alteration in the whole of its course. Our former notions derived it from the internal cavities and interstitial spaces: not so our present ones. According to these it is in the aforesaid structure it has its origin; and it is in the same structure that those movements begin, which, however little understood, are to transmit it into the lymphatics, veins and arteries, for the various uses it

is destined to subserve in the course of its circulation. Its existence in all of these vessels then, is secondary and derivative; and the *new* supply, (which previous to this secretory function has no *determinate* existence,) is a product which has been formed by the action of this structure, out of the chylo-lymphatic combination transmitted to it through the medium of the arteries. Hence the first step towards it is alimentation, and the last a *specific* action which belongs to the capillary structure. Considering the number of stages of this process, from the first to the last result; the progressive animalization of the thoracic compound; the striking resemblance of the lymph to arterial blood, previous to its combination with the chyle; its derivation therefrom; its being in its *pure* state, the *last* of the animal products in the whole series of assimilative changes, and the *first* to be mixed with the crude and as yet unassimilated; I think we have the most conclusive evidence of its being the transcendental result of a *determinate secretory function* having its seat in common with the rest of the nutritive actions of the body. And if to these considerations we call to mind the observations which have been already quoted from Blumenbach, and recollect that it is the most important of all the animal agents in the reparation of bodily injuries; that it constitutes, in the ovarian state, a large proportion of the nascent structure of all animals having their origin ab ovo; that there is good reason for believing it to be the blood itself in a certain race, which, from the absence of the colouring particles, has been called "white blooded;" and that it is also in this race we witness the most extraordinary manifestations of its reproductive power, as in the restoration of the head of the snail, &c. &c.; the impression of the truth of the doctrine which I have inculcated, falls little short of the most absolute conviction.

It is perhaps not the least of the recommendatory advantages of this doctrine, that it points to some direct and positive use, for which so important a compound has been instituted. In doing this too, a link is supplied, which hitherto has been wanting to make the automic cycle of organic actions perfect: the two extremes of digestion and nutrition are made, as it were, to meet; the boundaries of the direct and indirect series of organic functions are brought into apposition, where the molecular affinities conduct the intricacies of composition, and resolve those which have become extraneous. And instead of a straight forward train of alterations, in which it is impossible to imagine by what provision the train was to be renewed and kept in motion, we are presented with a revolving sequence, in which the co-operation of the antagonizing powers of composition and decay, for the preservation of the individual is explained in an intelligible

way. Formerly, when the chyle was formed, and its course traced to the heart, and its vitality therein recognised, the next step was to follow the blood augmented by this new supply to the lungs—to examine its alterations, and retrace it to the heart; then to pursue it through the arteries till it is lost in the capillaries; and, finally, having resigned it to the laws of textural appropriation to suppose that the assimilative functions were terminated, and that the arterial blood having been in an unknown way reconverted into venous, was straightway returned to the heart, from which it began to repeat its rounds as before. In the whole of this prosecution and inquiry, the means was never hinted at, by which, the invisible structure, while it was removing the impediments to renovation, was at the same time fabricating a menstruum, which by mixing with, and affecting, and vivifying the chyle, was to prepare for, and to resume the repetition of the series. It is probably owing to the little attention which was bestowed upon these phenomena, and the necessity which was at the same time seen that the explanation of the animalzation of the chyle should be made before the venous blood in the lungs became arterial, that physiologists have been so universally led into the general fallacy of ascribing to the influence of the atmosphere, that which has been shown to belong to other causes. Considering the remarkableness of the phenomena which then arise, the want of knowledge in relation to any preliminary action which could explain it, I cannot conceive how they could have arrived at any other inference: it could not, under presenting circumstances, have been located elsewhere. But it is evident, as the change from inorganization to life is the greatest, as it is also the most sudden that we ever behold, that the agent which is thus destined to produce it, must be previously endowed with all the requisites to its fulfilment: it is not surprising therefore that a process so elaborate, should be instituted to effect a purpose apparently so remote. According to the theory which has been advanced, the atmosphere, except in an indirect way, has nothing to do with it; but the change is the plain and undiminishing effect of that vital concentration of the particles which characterize the living solids and fluids of every organized body. It is exemplified in its powers of manifestation in the coagulation of the blood, even after it has been drawn from the vessels; the pleuritic crust; the membrana caduca of Hunter; and the membranes of inflammation—all of which, particularly the first, intimate to us something of the process which secretely attends the vital consolidation of the fluids. It is this which seems to determine the infinitesimal arrangements of the textures, as well the sensible and even voluntary contractions of the muscular system. That the

chylo-lymphatic combination should therefore display increasing manifestations of it, when mixed with the blood, is nothing out of the way, and calls for no new search after principle to enable us to explain it. Richerand observes, in relation to this product, that when abstinence has been continued for a length of time, this fluid, (meaning that of the thoracic duct,) appears to be nearly altogether lymph, approximating, as the abstinence is prolonged, nearer and nearer to the properties of blood; but if it be collected soon after digestion in the stomach has been completed, that it appears to be of a nature entirely different—separating after rest into two parts, the one a *watery* liquid, the other a semi-transparent *gelatinous* coagulum. Now if the results of animal chemistry are to be relied on, this *watery liquid* and *gelatinous coagulum* denote its imperfect composition, and indicate it to partake of the nature of an animalized fluid, united to one which is not. The composition, in short, exhibits precisely that intermediate degree of vitality which we would expect to find, considering the particular stage of the process—evincing less of it than blood, and more of it than chyle.

Majendie entertains the opinion that the lymphatics are appendages to the veins, receiving from the arteries that portion of their blood which has not been distributed by the common route, and returning it to the heart. A retrospect of all which has been delivered, represents them, to my apprehension in a very different light, having no such relation as the term imports, to either arteries or veins; but as a distinct system, formed for a special purpose, and bearing the same functional relation in the changes which are produced in the thoracic duct to sanguification, which chylification does to it. Viewing the process under this relation, as a preliminary step to sanguification, we are saved from the gratuity of imposing upon them superogatory duties, and avoid thereby the unphilosophic proceeding of attributing, in the same spirit, a wasteful expenditure of contrivance to nature, which she no where displays in any part of her province. It doubtless would have been superfluous in her to double her apparatus, for effecting that which the veins alone are apparently fully able to accomplish; and if the lymph is withdrawn from the general current only to be returned to it again, I must confess I cannot see where lies the wisdom in its having been withdrawn at all. The veins, there are undoubted reasons for believing, are the universal absorbents of the body; and if incorporation and comminute mixture had been the objects of this arrangement, it has evidently failed, for it could have been more completely accomplished without than with it, inasmuch as the combined fluids would otherwise have had to undergo the

whole round of the veins, before the demand for more blood was required by the arteries. The supposition subjects us to another gratuity also; that of making it a matter of entire indifference, whether or not the chyle be directly or mediately incorporated with the general mass of the blood.

It may not be the least valuable part of the foregoing considerations, that collectively they afford a plausible elucidation at least, if not the best, of the anatomical relations which have been reviewed, and their respective and connected uses.

The veins, according to this theory, arise exactly where the largest proportion of what is here considered the effete matter of the body, is set at liberty from the tissues, and terminate at the exterior of the largest excretory organ, where it is eliminated: they are therefore arranged according to the most favourable plan for performing the functions which have been ascribed to them, and in this they are much aided, by the direction in which their blood is made to circulate.

The arteries, on the other hand, consistently with the same plan, are arranged directly the reverse of this: they begin at the nearest practicable point to the source of the chylo-lymphatic supply, and terminate in that general animal laboratory, where every thing which is distributed to it, is sooner or later turned to a proper account: they also are therefore well adapted for performing the task which has been allotted to them.

Between the extremes of these two systems, we have on the one side the excretory organs, particularly the lungs, and on the other the parenchymatous or capillary, or secretory structure, both occupying an intermediate location between the direct and indirect apparatuses of composition and decomposition, and deriving from this situation every advantage which the relation can afford.

The former, by the double relation which they thus maintain, are truly made the great safeguards to the system, removing whatever is unfit to be transmitted from one apparatus into the other, and thereby defending to a certain extent the organs and tissues from the intrusion of adventitious matters, or whatever is likely to prove deleterious to them by reason of their extraneous relations.

We thus see the final cause of an occurrence which was formerly alluded to, viz.: that notwithstanding the variety of substances with which the powers of absorption have been tried, so few have found their way directly into the lymphatic system, while nearly all of them have done so into the veins: and we thus see also how it is, that odoriferous substances which have been conveyed or have found their way into the stomach, and passed through the portal ramifica-

tions into the vena cava, soon find their way out by the same channel, and are speedily recognized in the breath. The same offices are no doubt performed also by the kidneys and the skin; but it is evident from the above facts, and the peculiar situation of the lungs, that by far the largest amount is separated by the latter organs, and consequently that the former have comparatively but little to do.

In this separateness and mutual dependence of the two general systems of vessels, they bear an analogy to the anatomical relations of the systemic and pulmonic, each carrying on a distinct circulation but jointly co-operating to establish a single uniform one; and by their uncomplicated and unembarrassed relations, affording the happiest facilities towards the accomplishment of the wasteful and restorative operations.

It must be evident now, I think, in the arrangement of this general apparatus, in which the parts are relatively constructed for some common end, that to have incorporated the lymph directly with the mass of the venous blood, would have been to subject it to many inconveniences, which by the disposal actually adopted have been happily avoided. By keeping it separate, its purity is undoubtedly preserved, and it seems obviously thereby better qualified for achieving the ends which I have endeavoured to show it is destined to perform. Any other distribution of it is incompatible with its specific origin, vivific nature, and the insurmountable necessity which seems to have called for its preliminary union with the chyle in the reservoir of Picquet. It makes nothing against this theory, that all of the lymphatics do not terminate in the reservoir; the necessity is *partial*, not absolute, and in fact if we compare all of these vessels with the veins, and the ultimate union of their several fluids in the auricle and ventricle of the heart, we shall see reason, I think, for considering the collateral lymphatics which enter directly into the veins, as so many miniature thoracic ducts, and the thoracic duct as a colossal lymphatic. What lymph goes by the former channel into the veins is destined for the use of the venous blood: what goes into the latter, for the use of the chyle.

It is thought by some, that the valve which is situated at the entrance of the duct into the subclavian vein, is intended to prevent the lateral passage of the blood into the duct; by others, that it is to restrain the entrance of the chyle into the vein, and to occasion it to flow towards the heart in a slow and gradual stillicidium. Which, if either of these opinions is entitled to an exclusive regard, I am not concerned to know; either, or both of them, however, corroborate the theory which has been advanced; of the necessity of the purity and

separateness of the lymph, and its preliminary union with the chyle in that receptacle. The utility of placing a guard at this spot, however, is not greater than the advantages which have been gained by concentrating the terminations and origins of the different vessels at the heart. By this method, whatever may be the diversities of the capillary action, so far as it is liable to be influenced by the momentum of the circulation, and the general distribution of the blood, it becomes subjected to the control of one influencing organ: the *relative proportions* in which the circulating fluids are thus drawn into the heart and divaricated from it, become fixed and determinate; and the homogeneity of the blood is settled and preserved upon principles having the apparent uniformity of a law. Directed by this common influence, the Picquetian compound, manufactured out of definite quantities of chyle and lymph, are received into the right cavities of the heart; and in the same proportions uniting with relative quantities of the venous blood, and the lymph from the right arm and side of the neck, is transmitted to the lungs. Being here exposed to the action of an agent which is composed of a definite proportion of elementary constituents also, it is presumable that it undergoes a like definite variation; and is in this state returned to the left cavities of the heart, entering into general circulation, it is in the same state distributed to the tissues; and having at length satisfied their elective wants, terminates the series of what I have ventured to denominate the *direct* assimilative functions, and at which it was remarked our *straight-forward* investigations ended. And if the influence of this power is felt through the momentum of the circulation in the capillaries likewise, a fact which it seems cannot be denied; does it not also contribute, in a high degree, to preserve the equilibrium between the functions of composition and decay, and thus, to regulate even in its minutest adjustments, relations which are observed every where else to prevail? A more perfect device for maintaining the harmony of the vital functions cannot be conceived; and the congenity and consistency which seems to pervade every part of the plan, are additional proofs of the truth of the foregoing speculations.

It is thus that the œconomy of nature is preserved. An animated circle of reparation and ejection is continually revolving: and as in the species, every being is destined not for its own happiness alone, or its own isolated existence, so in the individual every organ and every function is created not for its own duration only, but for that of the other organs and other functions also, to which they are related by the ties of a common necessity.

I will now close by recapitulating the points directly or inci-

dentally embraced in the foregoing essay, which the leading arguments appear most effectually to sustain.

1st. The lymph is not a residuary fluid transmitted by a special route from the arteries into the veins; nor the decomposed matters of the tissues, which it is the special office of the absorbents to remove.

2d. That its origin, nature, and destination, render it probable that it is a *special secretion*, or the product of a power closely allied to it.

3d. That its office is, in the first place, to vivify the chyle; in the next, to augment the animalization of the arterial blood; and lastly, to produce all those effects which constitute the phenomena of reproduction, adhesion, &c.

4th. The lymphatics are, consequently, not the absorbent instruments of the body, and in a state of health are not in the least concerned in the imbibition and removal of dupurative matter.

5th. That this power is proved by positive facts and by argumentation, to belong exclusively to the veins.

6th. That the quantity of the carbonaceous principle in the venous blood is corroborative evidence of this, and is to be looked upon as the effete matter itself.

7th. That it is the cause of the difference of temperature between the arterial and venous blood, and its elimination in the lungs the only change which is effected by respiration. And,

Lastly. That the lungs are, physiologically, not absorbing organs; and in this respect, as well as several others, are allied to the skin and opposed to the stomach and alimentary passages.

Art. XIV. *Case of Poisoning by Cantharides.* By A. W. Ives, M. D. of New York.

On the evening of the 7th of March, 1827, I was called to the House of Refuge for Juvenile Delinquents, to see William Cummings, a healthy, athletic lad, seventeen years old. In a paroxysm of anger he had swallowed about an ounce of *tincture of cantharides*, supposing it to be laudanum. I saw him at nine o'clock, about an hour and a half after the poison was taken, labouring under the following symptoms:—hurried respiration, flushed countenance, eyes red and suffused with tears, profuse ptyalism, small but highly accelerated pulse, convulsive agitation and trembling, acute pain in the regions of the stomach and bladder, with such exquisite sensibility of these

organs that the slightest pressure was instantly followed by general convulsions.

An hour previous to my arrival, the apothecary of the house had given the patient a scruple of the sulph. zinc. and he had subsequently taken ten grains of sulphate of copper, by the direction of a medical friend. As he had not yet vomited, and the symptoms continued to increase in violence, one drachm of ipecacuanha was administered; and, at the expiration of twenty minutes, he was bled to sixteen ounces from the arm. The operation was followed by faintness and free vomiting, and the convulsive action became for a while suspended. He was now ordered two ounces ol. ricini, and to accelerate its operation, frequent mucilaginous injections; and should these fail of producing free evacuations, the oil to be repeated in four hours. He was also directed to drink copiously of linseed tea, to have fomentations applied to the abdomen, and in case of a recurrence of the convulsions, a laudanum injection after the operation of the cathartic.

It was found necessary to repeat the oil in the course of the night, after which full dejections took place. Convulsions of the limbs occurred at intervals, and also long-continued and painful priapisms.

On the morning of the 8th, I found the patient in some degree relieved from the violent symptoms of the preceding evening. His mind was calm; there was but little febrile excitement, though his pulse was quicker and skin somewhat dryer than in health. He was still unable to bear the least pressure over the epigastric and pubic regions, and he had passed no urine.

He was directed to be cupped over the hypogastrium—to take of the following mixture. Sp. eth. nitric. ℥ss. sp. acet. ammon. ℥iv. M.—Half an ounce every two hours—*linseed and barley tea at* 4 *o'clock, P. M.—repeat the ol. ricini—fomentations—pediluvium.*

9th. 9 o'clock, A. M.—During the preceding day, he continued comfortable, full evacuations followed the use of the oil, and the spasms disappeared. In the evening, however, an exacerbation of the symptoms ensued; the pain about the bladder increased; priapism returned; and, before the next morning, wild delirium. At this hour he is composed, complains of tenderness over the bladder, particularly on pressure, but is calm and comparatively comfortable—pulse eighty in a minute, with slight increase of action—a thin white coat upon the tongue.—*Venesection, to* ℥viii.; *ol. ricini, at* 2 *o'clock, P. M.; fomentations to be continued through the day.*

10th. At 8 o'clock this morning I found him in a state of complete insensibility. About 7 o'clock, the evening before, the convulsions returned with appalling violence, and continued for two or three hours,

when there was an interval of quiet and reason. At 2 o'clock, in the morning, after having complained for a short time of severe pain in the head, he sunk into a state of coma, in which he continued at the time I saw him.—*Semicupium; strong sinapisms to the back of the neck, feet, ankles, and legs; warm stimulating injections.*

At 11 o'clock, Dr. J. Stearns, my colleague at the House of Refuge, saw the patient with me in consultation; we now found him rational, and his symptoms much the same as yesterday morning, but he has yet passed no urine since the attack.

11*th.* At 10 o'clock, A. M. the condition of our patient apparently much improved; four hours after our last visit he had a copious evacuations from the bowels, and at the same time voided eight or ten ounces of high-coloured urine. In the course of the day he occasionally complained of pain in the head, and at times had slight delirium, but these symptoms subsided after repeating the sinapisms. He has passed no water since yesterday afternoon.—*Blister to the nape of the neck; sinapisms above the pubes; calomel, ten grains—to be followed by castor oil.*

The evacuations from the bowels, were from this period free and natural, and the healthy secretion of the urine was restored. The patient recovered rapidly, so that in one week he was able to return to his customary employment, and to eat, with a good appetite, of the usual diet of the house. He seemed to regret sincerely, the folly and rashness that had well nigh destroyed him; and from this time was obedient, faithful, and industrious, and apparently free from all symptoms of disease, until the 14th of April.

About 10 o'clock this day, whilst employed in whitewashing, he was suddenly seized with severe pain in the head, pain in the right side, chilliness, and trembling, and shortly afterwards with universal spasms. (He was from this time under the immediate direction of Dr. Stearns, who was in attendance at the refuge, and in the hospital, when Cummings was brought in.) He was immediately directed an emeticocathartic, and during the reaction, which succeeded the attack, was bled largely.

By these means he appeared to be relieved of pain, and the spasms subsided, but he soon after sunk into a comatose state, and remained in it till the next morning.—*Fomentations; pediluvium; sinapisms to the thighs and feet; blister to the nape of the neck.*

15*th.* In addition to the above means he was this morning directed fifteen grains of calomel, and subsequently sulphat soda in sufficient quantity to promote free evacuations from the bowels. He was again for a few hours roused from lethargy, but at 1 o'clock P. M.

relapsed, and thus as the force of disease or the power of remedies predominated, was alternately comatose and rational till morning.

16*th.* Dr. Stearns and myself visited him at 10 o'clock A. M.—although he complained of dull pain in the head, and when suffered to remain long undisturbed, became somewhat lethargic, [still] there were no symptoms that were manifestly alarming. He spoke rationally and intelligibly, and his pulse, eyes, skin, and general appearance seemed to indicate a favourable crisis.

He was now put upon the use of small doses of calomel and Dover's powder as an alterative. At five o'clock of the same day he was again attacked with severe convulsions, which continued about four hours.

17*th.* Better—a slight return of spasms in the afternoon.

18*th.* His mouth and gums are affected by the calomel. From this time he appeared to be rapidly improving till the 20th, when he had so far recovered his strength as to sit up the whole day. The only unfavourable symptom observable at this time, was an unalterable conviction in his own mind that he should shortly die.

21*st.* At four o'clock P. M. he had a recurrence of terrible convulsions, which lasted about half an hour, then a lucid interval of four or five hours, and finally a state of entire insensibility, which continued till ten o'clock A. M. of the 22d, when he expired.

At four o'clock of the same day the body was opened, and by the assistance of Drs. Wood, Cheeseman, and Rodgers the contents of the cranium, thorax, abdomen, and pelvis were examined with unusual particularity.

The only morbid appearances exhibited were the following:—The blood vessels of the brain were preturnaturally turged, especially those of the cerebellum, which was covered with a coat of coagulable lymph. About an ounce of serum was effused into the base of the skull. The mucous membrane of the stomach was whitish, or paler than natural, soft, pulpy, and very easily detached by rubbing it with the finger. Sanguineous congestion in the pelvis of the kidneys, exhibiting the usual appearances of inflammation in these parts. Ten ounces of urine were drawn from the bladder by a catheter.

The following queries are obviously suggested in the foregoing case. Was the disease and death of the patient produced solely by the cantharides? What connection was there between the first attack and the second? What was the immediate or proximate cause of the final disease? That the first attack was exclusively owing to the cantharides, I think there can be no reasonable doubt. Cummings was

the first subject admitted into the refuge, and of course had been there more than two years. During the whole of this time he was in perfect health. It may be said that some symptoms were absent which usually characterize the action of cantharides, but the fact that there was an entire suppression of urine, and long-continued painful priapism, symptoms which this poison only would be likely to produce, is evidence, which viewed in connection with the circumstances of his taking it, shows conclusively that his disease was solely produced by that cause. In the course of the first sickness there was evidently great sympathetic irritation, if not an entire metastasis of disease, first between the stomach and urinary organs, and finally between these organs and the brain. This appeared not only from the symptoms alternately prominent, of the deranged functions of these several parts, but from the traces of inflammation discovered on dissection.* The violence thus sustained by these organs, left them strongly predisposed to a recurrence of diseased action, and the appearances on dissection not less than the symptoms which immediately preceded death, showed the brain to have suffered most severely in the first attack, and to have been the chief seat of disease in the last. Cummings had been constantly and laboriously engaged for four or five days before he last sickened, and was greatly fatigued the preceding day, which of itself was sufficient to excite disease in a vital organ already no doubt impaired by previous lesion.

I have said that Cummings had taken an *ounce* of tinct. of cantharides, but would now state more definitely, that he was seen to drink the medicine from a small-sized ounce vial, which he filled with the tincture, and took from the medicine case that morning. The fact that he obtained it from the vessel containing cantharides, was confirmed by examining a small portion remaining in the vial. Now then, if in this case, sickness and death were caused by an ounce at

* It was not till after I had made the above memorandum of post mortem appearances that I saw a review of M. Andral's work on "Chronic Gastritis," in which *paleness and softness* of the gastric mucous membrane, *unattended by redness*, are particularly pointed out as characteristic marks of inflammation. These phenomena were strikingly exhibited in the case under consideration, and are strongly confirmatory of Andral's statement. He says, "looking to etiology, we shall find the greater number of agents in the production of these softenings, belong to the class of irritants. Poisons introduced into the stomach of animals produced the appearances in question." Again he remarks, "in young, plethoric, and irritable persons, endued with great nervous sensibility, a very small softness of the stomach will produce a great general reaction in the system, followed by intense fever, delirium, convulsions, disturbance of all the functions and sudden death."—*Medico-Chirurgical Review, Vol. X. p. 150, American Edition.*

most of this medicine, how shall we reconcile it with the statement of a late writer, that, (in cases of impotence,) he has administered it in several instances, in doses of one or two ounces, two or three times a day; and that, on one occasion, a patient under his charge, labouring under extreme mental anguish, took six ounces of tinct. of cantharides during the night, without the least mischief arising.* It is acknowledged that sometimes in the last stage of fevers of peculiar malignity, and also in some diseases of the stomach itself, this organ becomes so torpid that all medicines cease to have any effect; but it is not pretended that any such peculiarity existed in the cases above mentioned, for the writer labours to prove the general error of administering the cantharides in too small doses, and the entire safety of adopting his example in ordinary practice; and this is my apology for introducing the subject in this place. So many cases are on record, where death ensued from a much smaller quantity than is here prescribed as an ordinary dose, that it is fairly inferred that the preparation administered in the above cases was inert, and that the practice is an unsafe precedent in the use of the remedy.

During the illness of Cummings, Dr. G. Emerson, of Philadelphia, then on a visit to this city, saw the patient with me. On his return home, he had the kindness to send me the subjoined case, which he transcribed from the note book of the late Dr. S. P. Griffitts. It is an additional illustration of the action of cantharides as a poison, and as is justly remarked by Dr. Emerson, "the value of the case is greatly enhanced from the high degree of fidelity and candour which marked the character of the narrator."

"7 mo. 29th, 1804. Called to see ———, —— years of age, who three hours before had swallowed a tea-spoonful of powdered cantharides by mistake. Ten minutes after she threw up a small quantity of phlegm. An hour after took fifteen grains of P. Ipecac. and plenty of warm water, and threw up the contents of the stomach with the cantharides. Took a large dose of castor oil, which puked and purged. Her pulse now low, with great retching—burning in the stomach—sore tongue—strangury. Was bled fourteen ounces. Mustard cataplasm to the stomach. Took ten drops of tinct. thebaic. with spt. nit. dulc. every hour. At bed time one grain of opium and warm bath. Rested well. Next day heavy—sickness less—strangury diminished. Said she felt the urine passing from the kidneys to the bladder; where, when it arrived, it occasioned a sensible burning. Drank very often, chiefly milk, and molasses and water. Little vomiting—great costiveness, though enemata of sal. Glaub. had been given. Semicupium which produced great sweat. Bled again at night. Strength decreased, and she sunk under the weakness."

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* Facts and Inferences chiefly relating to Medical Jurisprudence, &c. by John W. Francis, M. D. &c. Vide New York Medical and Physical Journal, Vol. 2, p. 28.

REVIEWS.

ART. XV. *De la Non-existence du Virus Vénérien, prouvée par le raisonnement, l'observation et l'expérience; avec un Traité Théorique et Pratique des maux Vénériens, rédigé d'après les principes de la Nouvelle Doctrine Médicale.* Par L. F. R. A. RICHOND DES BRUS, Du Puy, (Haute-Loire,) Docteur en Médecine de la Faculté de Paris, Ex-Chirurgien aide-major a l'Hopital Militaire de Strasbourg, Associé Correspondant de la Société Royale de Médecine de Bourdeaux, de celles de Toulouse, Metz, Strasbourg, et Correspondant de la Société des Sciences, Arts et Agriculture d'Agen. A Paris, 1826. Vols. II. 8vo. pp. 883.

THE first quarter of the nineteenth century, will stand conspicuous in the annals of medicine, for great changes in the pathology and treatment of diseases. No subject has perhaps profited more by the revolution than that of venereal complaints, as no other was ever more obscured by errors, or tramelled by imposing dogmas. The authority of such names as HUNTER, BELL, and SWEDIAUR, had bowed down the profession to implicit faith and patient credulity. But these obstacles, ever in the way of improvement, are rapidly yielding to the successful efforts of enlightened individuals, whose reports regarded at first as heretical, have been subsequently viewed by the more ingenuous with complacency, and finally rewarded with a fair investigation. In this way firm believers in the specific and even chemical agency of mercury, as the only neutralizer and destroyer of the syphilitic poison, have come at length not only to a knowledge of its frequent inefficacy, but to a sense of the injury generally attendant upon its use, even when administered according to the most orthodox directions. Patients were found to survive, when mercurials were either dispensed with entirely or sparingly exhibited; nay, even to recover from local and constitutional ailments under other treatment. The old practice, founded upon the all-sufficiency of this agent over the poison, yielding to the force of these observations, the cure of lues, is now successfully conducted by many upon principles alike applicable to all diseases. In this country the number of those who have ventured thus far is yet comparatively small: but, counting upon the ordinary force of truth, and the ardour with which it is here sought after, we have no hesitation in declaring it as our firm belief, that in

a very few years a total reformation will have been effected in this branch of medicine, to the almost entire exclusion of the old, esteemed, fundamental doctrines.

Nor can we feel much wonder at the tenacity with which the old opinions relative to venereal affections have been adhered to, when we consider the weight of the chief authorities that founded and sanctioned them. Some of these were true disciples of the Baconian school, regulating their course by no other landmarks than those established by nature, and ascertained by observation and experiment. For such men with such guides to fall short of the attainment of truth, shows the narrowness of the limits which circumscribe human genius, and whilst it warns us against too implicit faith in any names or authorities, should at the same time make us cautious even of our own conclusions and opinions.

The freedom of inquiry now spreading on every side, we hail as the power that is to redeem the followers of the healing art from much of the opprobrium they have been made to sustain, and must continue to bear, until their department acquires a greater degree of that exactness which gives stability to the other sciences. It is the obscurity and uncertainty hitherto involving medical subjects, which have given rise to such perpetual discord among physicians, and invited open scepticism and jests; allowed empiricism to make her bold encroachments, mock at the angry fulminations and unavailing attempts employed to put her down, and frequently to triumph from the superior confidence awarded to her perilous but often successful nostrums. And to the same causes is it owing, that the evidence of physicians, upon points connected with their profession, have so little weight in a court of justice. It is only the dawn of a better intelligence that can free medicine from this perplexing and degrading situation. We have, it is true, advanced so far as to be able to smile at the hermetic science of the Egyptians, and that absurd love of mystery, which led them to worship the Ibis, because the space between its legs when parted asunder as it walks, forms a complete equilateral triangle. But having cast off the slough of superstition, we have yet to free ourselves from the dominion exercised over us by others, and submit more entirely to the guidance of our own common sense and observation. Certain it is, however, that we have the most difficult allotment of science assigned us for cultivation, seeing that whilst others are concerned in tracing the forms and relations of material substances, and the reciprocal actions of inert matter; it is our task to acquire a knowledge of the phenomena of life and to ascertain the operation of the most subtile agents, upon principles only

cognizable from their effects. But the greater the difficulty, the greater the glory of the achievment. HARVEY, the NEWTON of our science, has brought to light secrets hidden from the mind of man, for all we know, from his first creation, and the successful researches of BICHAT, in addition to what they have already accomplished, may yet develope operations in the animal economy, which have been consigned to the list of inscrutible first causes.

We must not, however, suffer our zeal for the general welfare of the science to lead us from the particular subject in which we are engaged.

The main points which M. Des Brus regards himself as having established in his treatise, are—1st. The non-existence of a specific venereal virus, said to have been originally carried from America to Europe; 2d. That venereal affections were known long before the period of the pretended importation; 3d. That the primary and secondary effects attributed to the specific poison, possess no distinctive characteristics and are not specific; 4th. That the manner in which the disease is introduced into the system, its seat, the causes of its reproduction and maintenance in defiance of the processes of assimilation and decomposition incessantly going on, are unknown, and have given rise to a multitude of ridiculous hypotheses; 5th. That the crowd of different remedies employed with advantage against syphilis, shows that its nature is not specific; 6th. That mercury does not always cure it, but sometimes aggravates and proves dangerous whilst it cures a great many diseases not venereal; 7th. That the non-mercurial treatment is favourable; 8th. That the development of the constitutional phenomena and even the existence of hereditary syphilis may be explained without reference to a virus; 9th. That these last may be cured without a specific; 10th. That all, in fine, which has been said of syphilis, complicated, disguised, etc. is altogether absurd. The reasoning, observation, and experience brought by our author in support of these various positions, will be presented in this article, so much of them, at least, as will serve to do justice to his arguments. But it may first be necessary to examine the pretensions of one who has made so bold an attempt, not simply to break through the limits prescribed by former authorities, but to overturn the whole foundation and superstructure upon which the doctrines and treatment of the disease had formerly rested, substituting others of an entirely new order.

M. Richond Des Brus, Doctor of Medicine, of the Faculty of Paris, and, as may be seen by referring to the heading of this article, member of various other medical and scientific associations, professes to

have devoted himself almost exclusively to the consideration and treatment of venereal affections. Charged with the direction of this department of practice in the Military Hospital of Strasbourgh, he had there great facilities of observing them in all their varieties, of studying their causes, modes of development, characters, and peculiarities in different individuals and under different circumstances. He had likewise an ample opportunity of comparing the advantages obtained from the employment of the various modes of treatment. The simple assurance of his having collected with care eleven hundred cases, and treated nearly three thousand patients, is calculated to recommend the fruits of his observations to respectful attention.

On commencing the exercise of his profession, our author appears to have been completely tied down to the principles and practice then almost universally held by the profession. He confesses that he was too freshly imbued with the lessons of Professor Cullerier, to think of any thing else than putting his instructions into practice. All his patients, therefore, were submitted to the mercurial treatment, and, with very little variation, the exact rules laid down in the works of Swediaur and M. Lagneau, followed. If a soldier returned to his wards shortly after leaving them as cured, or presented an ulcer, bubo, or wart, which he pretended were not owing to a fresh infection, he immediately concluded either that the patient had eluded his vigilance, and neglected the mercurial course, or that sufficient mercury had not been administered for the destruction of the virus. At once, therefore, recourse was again had to the mercury, which was administered more freely than before.

"I was often," says he, "surprised at the tenacity of the virus, which in some patients resisted three or four courses of mercury, but authorized by my classic authors, attacked it each time with the same arms under different forms. I smiled when a poor conscript ingenuously told me that he had never any symptoms of syphilis, but that the surgeon of his regiment had nevertheless assured him that the excrescences which developed themselves about the anus, during his journey, were venereal. Have you ever been with women, I demanded? If he replied in the affirmative, I then unhesitatingly told him that he had contracted syphilis, d'emblée,* whilst if the answer was to the contrary, I gave him to understand that he might have received it from his parents. On both suppositions I pronounced it equally the pox, and felt tempted to address him in the phraseology I had long been accustomed to hear every morning from one of my old professors, 'you are rotten to the marrow of your bones.' He was thereupon condemned without mercy to pass through the routine of grand re-

* A term used to imply a reception of the virus into the system without any previous alteration or affection of the genital organs. By means of this ingenious invention the believers in a specific virus are enabled to slide over many difficulties, to their own satisfaction at least.—Reviewer.

medies. In merely doubtful cases, I always preferred submitting my patients to a treatment of *precaution*, to leaving them exposed to the long series of evils which I believed the virus capable of producing."

There are few even at this day who will not recognize most of the views, here presented by our author, as their own, either at the present, or some other period of their lives. With but few exceptions they were certainly the reigning doctrines when we first walked the wards of hospitals in pursuit of instruction. Our author's account of the difficulties that so frequently arose from a rigid adherence to the old views, and the manner in which he was led on by observation to the adoption of others, is both interesting and replete with instruction for those who may yet be travelling in the old road. He found himself like all other practitioners, if they would but confess it, very much embarrassed in distinguishing between ulcers which were venereal and such as were not.

"I knew," says he, "that many lazy soldiers, to get clear of active duty, were in the practice of forming ulcers upon the prepuce by means of caustics, for the cure of which they were immediately placed under my direction. On the other hand, I was aware, that other soldiers, to avoid the mercurial treatment which they dreaded, attributed the ulcers, that showed themselves after impure connexion, to chafing, masturbation, or hard drinking. It therefore became equally important to avoid error, and becoming the dupe of such patients. At first, I fancied, that by the aid of signs laid down by authors as pathognomonics of syphilis, I could readily distinguish between the different species of ulcers which I had to manage. But in this I was mistaken. It often happened that I met with many ulcers upon the same individual, each of which presented a different aspect, one being syphilitic, another having no such appearance. Resorting to mercury as the touch-stone, I have seen those disappear which I did not consider venereal, whilst others with the characteristics became aggravated. If I only employed local emollient baths, and mucilaginous drinks, I sometimes saw veritable chancres speedily disappear, and all the symptoms give way. In other cases I encountered all the marks of syphilitic ulcers strongly determined, admired and pointed them out to the students present at my visit, and have been told the next day that the sores were produced and kept up by the diurnal application of caustic. It was, after many similar observations, that I was induced to regard the various forms presented by ulcers, as the products of irritation diversified according to its intensity, duration, and seat, and to believe that the pretended symptoms of syphilis did not depend upon the action of a virus. In this manner was I convinced by my own observation, supported by the testimony of others, that ulcers of the glans, skin of the penis, and scrotum, have a different aspect from those of the prepuce, and that marks, such as callous edges, perpendicular cut, hardness at the base, &c. given as pathognomonics, rarely belong to these last."

Our author experienced further embarrassments from what he observed relative to the nature and characters of buboes, which he saw making their appearance after mild gonorrhœas, ulcers without the

specific aspect, and after superficial excoriations occasioned by mechanical violence. In all these cases, he found them the same. Regarding their development as similar to that which ordinarily attends irritation of the lymphatic ganglions, he often treated them in accordance with this view by the application of leeches and emollient poultices, and in this way procured the resolution of such as he had believed decidedly venereal. Even when these suppurated, and their edges ulcerated and became callous, they were cured by a treatment adapted to simple irritation. These observations led our author to think that syphilis in its primary stages ought to be associated with the ordinary phlegmasiæ, and receive the same treatment. But as yet he had not doubted the existence of a virus, but only considered the inflammation it occasioned as not specific, although he believed in the necessity of destroying the morbid principle or cause by mercury. Subsequent experience, however, led him to observe the frequent inefficacy and often injurious effects of this universal remedy, and to doubt its infallibility. "I was," says he, "forced to the conclusion that mercury had no direct action upon the virus, and did not neutralize it."

Upon the faith of these observations he was finally led to treat constitutional syphilis occurring in soldiers of delicate and irritable habits, in whom the use of mercury occasioned numerous inconveniences, by such other means as he thought would be judicious if no specific cause existed, and instead of the result being merely palliative, he was surprised to find cures. He even ventured to discharge these patients without the exhibition of mercury, and found that their cure was complete.

"What reflections," he observes, "did these new and unexpected observations lead me to! Can the cure be perfect, I inqured of myself? Will not the poison give rise to new accidents? But does this virus which occasions me so much embarrassment really exist? And am I not frightened by a phantom? It is true all authors admit it, but all the facts which I have gathered are opposed to the principles which proceed from its admission. And is their testimony of no value? Having once doubted, my imagination set to work, and I sought by every possible means to gain new lights. For this purpose I made fresh observations. I imagined that the virus did not exist, and endeavoured to account without it for the phenomena attending on syphilis. I treated patients without mercury, and read with a spirit of scrutiny and suspicion those authors whom I had until now believed to the letter. I examined the basis of their theory, traced their most accredited opinions back to their sources, and learned from these investigations that authors have successively copied from each other, admitted the existence of a venereal virus without sufficient proof, and that the whole prevailing theory rested upon a sandy foundation, susceptible of being swept away at pleasure."

We have been the more inclined to present the train of observations and inquiries which ultimately led our author to change his opinions, inasmuch as the account furnishes a history of the experience of many others who have been interested in similar investigations. It is hardly necessary for us to say that many of his tenets have long been advocated in this country, though as before stated, by comparatively few. We would not therefore have it supposed that we present them as new and unknown, although some of them will doubtless be recognized as such.* But these doctrines, though founded upon the firm basis of experience and reason, have hitherto been so generally sacrificed and forsaken for those of the old school, that they will, in the shape presented by our author, gain new force, and bear down obstructions too strong to be removed by former well-directed but less regular attacks.

Notwithstanding the entire change in his views, M. Des Brus was still for a while bound down to an observance of the old routine practice, being at the time of his conversion obliged to conform to the orders of a surgeon in chief. The appointment, however, of this superior to another station, left the field entirely open to Des Brus, and he was not long in seizing upon the advantage. Accordingly he put almost all his patients upon a treatment without mercury. Under the name of saccharine powder he administered pulverized sugar to them in the form of glosso-palatinal frictions, watching to see that they used it with sufficient confidence to tranquillize their minds, and believe the medicine indispensable for their cure. The results were most satisfactory. Primitive as well as secondary symptoms readily healed, and relapses were no more frequent than after the old method, inconveniences were rare, and the general health less impaired.

"The reader," says he, "will judge of the importance of these results by the numerous facts which he will find in this work. Experience has sanctioned my method: let him try it, and he will be easily convinced of my veracity."

Of one thousand six hundred and fifty-five patients admitted by him

* As early as the year 1808, Dr. Rousseau, of Philadelphia, published in the fourth volume of the Philadelphia Medical Museum, views relative to venereal affections closely allied to many which are brought forward by Des Brus. Dr. Rush, in his Comments upon Sydenham, has most happily anticipated the present era, by observing that he had no doubt the time would come, when syphilis, like all other diseases, would be treated according to general principles. Dr. Chapman's opinions relative to venereal affections have in many respects been for years in accordance with those of the new school. Dr. T. Harris, of the U. S. Navy, has shown himself a very able advocate of the rational plan of treating syphilitic affections.

into his wards from March, 1823, to August, 1824, three hundred and forty-two were subjected to the mercurial treatment, that he might be able to compare the effects of the two plans.

We shall conclude this account of our author's introduction with a passage relative to the prejudice and opposition which those have to contend with, who dare to step aside from the old beaten track and strike out paths of their own.

"In openly attacking," he observes, "a theory which four centuries of observation seem to have rendered unshaken, which has been sanctioned by the most illustrious men whose opinions have ever enjoyed popularity, I am sensible that I expose myself to the choler of the numerous partisans of morbid entities, vices, and a virus, and to be treated as a worthless blasphemer. For I know with Madame De Staël, that all opinions differing from the prevaling spirit, whatever this may be, offend the vulgar, and that human reason habituates itself to servitude even in the field of philosophy and the sciences. But what care I for the clamours of such persons; provided I succeed in gaining the attention of the industrious and impartial student, and cause some practitioners to doubt, my objects will be accomplished. It is doubtless very difficult to convince prejudiced men, and I cannot flatter myself with being able to effect alone the useful revolution which the state of the science demands; but other practitioners possessing more influence over public opinion will at length raise their voices to overthrow that theory which is a shameful monument of the credulity of our predecessors. I believe the moment favourable for calling the attention of physicians to this obscure point of medicine: minds are at present eager for truths, weary of hypotheses, and attach importance to nothing but well-attested facts."

The title to the first chapter of our author, "la syphilis n'est point une maladie nouvelle," lays open a highly interesting field for inquiry, but one which has of late years been so ably examined, as to leave little room for new research, or for doubting the position of our author. Was the point once decided in the affirmative, that there really exists no specific venereal virus, it would render attempts to establish the position entirely superfluous; and, were there no other reasons of sufficient weight to disprove the American origin of this malady, the lights of history alone would afford ample demonstration. In the discussion of this matter we are sure that our opinions rest perfectly free from the influence of national prejudice. We do not feel that the honour of the western hemisphere is at all at stake in the decision, and could the American origin of this very unseemly disease be clearly substantiated, the only reflection we should perhaps be tempted to make in reference to the subject, might be, that the new world was not altogether exempt from that alloy of evil which a wise Providence has every where else blended with his choicest favours.

As however we cannot expect that our own conviction will be unreservedly admitted by others holding a different faith, or whose minds have never been completely set at rest upon the question, we shall proceed to state the most conclusive evidence which our author has brought to bear upon the question.

Previously however, we beg leave to refer to a few of the leading speculations of former days, to show that such existed, and were doubtless held in equal veneration with those of later date. Thus in 1519, Coradin Gilini pretended that as a consequence of the conjunction of Mars and Jupiter, on the 16th of January, 1496, in a warm and humid sign, there arose vapours from the earth and water, which, inflamed and put into action by Mars, corrupted and changed the air, and engendered those bad humours which occasioned the disease. But the greater number of the believers in astrology were disposed to lay the blame upon the eclipses of the sun and moon. Some, who perhaps entertained less faith in the influence of the planets, started the singular opinion that the true source of the poison was to be found in the wine casks of Somma, a village near Mount Vesuvius. The Spaniards, they say, compelled to retire from this place, added to the wine they abandoned, all the blood which they could draw from the sick in the hospital of St. Lazarus, a sophistication which rendered the liquor poisonous, so that it communicated disease to those who succeeded them. This fable is however eclipsed by another, maintained by one Leonardo Fioraventi, who had the facts from no less an authority than the son of a butcher to the army of Alphonso, king of Arragon, which prince, as is well known, carried on a long war against the duke of Anjou. In this state of things the provisions on each side becoming at length exhausted, the suttlers of the two armies, impelled by the desire of gain, had recourse to supplies of human flesh; from the eating of which the disease in question originated. In corroboration of this opinion, the author asserts, that he had made many experiments upon dogs as well as pigs, the result of which was, that animals nourished upon food of their own kind, have their bodies covered with pustules, lose their hair, and perish miserably. These last observations were subsequently confirmed by other authorities, and, with the preceding, amply suffice to show the darkness which then overshadowed the medical art, and the ineffectual groping of its followers. Under these circumstances, it is no way surprising that when Schmauss, a professor in the school of Salzbourg, in 1518, started the new idea that the disease was brought from America, upon the ground that this country alone produced guaiacum, then regarded as the specific provided by nature for its

cure, he should have gained so many adherents, since the wild theories, then in vogue, could only have been entertained for want of better. Its plausibility, at least, is amply attested by the fact, that it has kept its ground very generally ever since, and even now has its numerous and firm advocates.

The opinion of SCHMAUSS, as established for the most part by the influence of GIRTANNER and ASTRUC, sets forth that syphilis was unknown in Europe until introduced by the followers of Columbus, who had received it in their intercourse with the savage women of the New World. That many of those who had contracted the disease either in America or Spain, joining the army of Gonzalvo, took the virus with them into Italy and communicated it to the prostitutes of Calabria and Naples, by whom it was transmitted to the French army, after which it soon spread over the rest of Italy, to France and other parts of Europe.

Let us examine how this general belief is sustained by historical testimony. On the 4th of March, 1493, Columbus debarked from his first voyage, at Val-de-Parayso, near Lisbon. After spending nine days in the Portuguese Capitol, he set out for Seville, where he arrived on the 15th of the same month. From thence he went to Barcelona, and arrived there about the middle of April. Now it is distinctly recorded that the Spanish army under Gonzalvo, did not arrive in Italy until the month of May, 1495, before which time we have the clearest accounts of syphilis being in Rome, namely, in 1493, as recorded by INFESSURA and other Italian writers of that period. It is, therefore, impossible that the troops of Gonzalvo should have been the first to carry it into Calabria, and, as we think, totally incredible that in the course of three months after the arrival of Columbus and his followers, (the number of which, originally only one hundred and twenty, had been reduced by the establishment of a colony of thirty men on the island of St. Domingo, and other causes,) it should have been spread by them to Berlin, Hallé, Brunswick, Meclenburgh, Lombardy, Auvergne, and other countries, where it is demonstrated to have existed, by the accounts of ZORELLA, ALEXANDER BENOIT, CAPREOLI, FULGOSI, SABELLICO, and others.

For proofs that the various forms of syphilis were known to the ancients, M. Des Brus refers to the work of Professor GRUNER, which contains a crowd of passages relative to the subject, extracted from the Greek, Latin, and Arabian writers. He also thinks that an attentive perusal of the books of HIPPOCRATES, *De natura muliebri*, *De morbis mulierum*, and others, will lead to a conviction that the descriptions there given of ulcers and other affections of the genital

parts, suppurations of the inguinal glands, etc. correspond perfectly with the symptoms now styled venereal. In support of this disputed point, we shall cite but few, of many authorities, as quite sufficient for its establishment. The first is Celsus, who in his sixth book and eighteenth chapter, describes, with an accuracy leaving no room for doubt, the most ordinary effects, both primary and secondary, arising from impure sexual intercourse, among which are phymosis and paraphymosis, attended with discharge and ulcers, the last being particularly mentioned as situated on the interior surface of the prepuce, on the glans, and penis itself. The same prescriptions which he advises for the treatment of some of these affections, he likewise speaks of as applicable to the ordinary secondary symptoms affecting the tonsils and palate, together with ulcerations of the mouth and nose. "Eadem autem compositio tonsillis, uvæ madenti, oris nariumque ulceribus accommodata est." The whole chapter is replete with evidence in favour of our position.

The second reference we shall make is to the Bible, where, in addition to the attestations furnished in other parts and frequently quoted, we would call the attention to a comparison instituted by the psalmist between spiritual and bodily infirmities, in the following expressions.

"There is no soundness in my flesh because of thine anger; neither is there any rest in my bones because of my sin. For my iniquities have gone over my head: as an heavy burthen, they are too heavy for me. My wounds stink and are corrupt because of my foolishness. I am troubled; I am bowed down greatly; I go mourning all the day long. For my loins are filled with a loathsome disease; and there is no soundness in my flesh. I am feeble and sore broken: I have roared by reason of the disquietness of my heart. My heart panteth, my strength faileth me: as for the light of mine eyes, it also is gone from me. My lovers and my friends stand aloof from my sore; and my kinsmen stand afar off."*

If there be no allusion in this passage to that "loathsome disease of the loins," of which we are treating, we must confess ourselves greatly at a loss to conjecture, what other bodily disorder, proceeding from "sin and foolishness," and thus situated, could have been intended.

Of the writers of comparatively modern times, who have treated most unequivocally of venereal affections, we shall cite but two or three, as quite sufficient for our purpose.

Rhodius, in his notes to Scribonius Largus, mentions the death

* Psalms, xxxviii. v. 3, 4, 5, 6, 7, 8, 10, 11. Other passages bearing upon the same point may be found in Leviticus, chapters xiii. xv. xx, and Numbers, chap. v.

of a prince of Padua, in 1355, in consequence of an inveterate disease contracted in the privy parts from excessive intercourse with women.

Salicet, a surgeon who lived in 1270, devotes a whole chapter to pustules and other corruptions which manifest themselves upon the penis and around the prepuce, arising from intercourse with public women.

Gardonnius, who lived in 1303, treats clearly of diseases arising from impure sexual connexion. In a chapter entitled *De apostemate in inguinibus*, he says, that the affection called bubo of the groin, is occasioned either by a cold disease thrown from the liver towards parts which are weak and empty, or by a warm influence, as when a man happens to have his penis corrupted from intercourse with an uncleanly woman.

With respect to the true source of syphilitic complaints, no one, we think, who examines the subject with candour, and the help of the lights recently shed upon it by able investigators, will be able to believe that the title so long vested in America as the original fountain, can be maintained with the slightest plausibility. The assertion of the celebrated Astruc, that "syphilis is never engendered in Europe, neither by bad regimen, nor by any abuses of nature, but is kept up by foreign leaven, which perpetuates or rather renews itself continually," we consider as baseless and erroneous in the extreme. Well-attested instances of the spontaneous production of the various forms of syphilis, are in fact so extremely numerous as to make one hesitate which to cite first. Not a few have fallen under our immediate observation, and we have consequently long been a firm believer in their spontaneous origin, from too active excitement of the genital organs, or other causes with which we may not be acquainted. Venereal affections are doubtless coeval with the vice of promiscuous and excessive venery, and may be regarded as an effect of that undeviating law of nature, by which evil consequences are made the invariable attendants upon excesses. Could it indeed be reasonably supposed, that a female should have frequent intercourse with several men, and experience no inconvenience from thus committing violence upon nature, and interfering with her most important function. A different result might certainly be expected. Organs so admirably formed and exquisitely endowed, could not escape injury from mechanical violence with other causes of excitement. A high degree of irritation and even inflammation must necessarily ensue, and the secretions from the parts be changed into foul and acrimonious discharges, rendered perhaps still more so from intermixture with the most acrid of

animal secretions. Who will deny that these consequences, with all the train of ulceration, etc. cannot take place without the necessity of the American leaven. Even before disease has manifested itself by any external appearances, the over-excited genital organs may impart to their secretions virulent properties, capable of producing active disease, when applied to a very sensitive and irritable surface on another person. There is, in our opinion, no security against venereal contagion, where either of the parties is addicted to frequent promiscuous intercourse. Appearances of health, under these circumstances, are never to be trusted.

But why has the last of the fifteenth century been so generally fixed upon as a period when syphilis made its first appearance in Europe? The following reasons we think may be given in answer to the question. It would appear from various accounts written at the time, that exanthematous diseases prevailed extensively, and particularly in the southern parts of Europe. As the most authentic records represent the age as one of extreme licentiousness, it is natural to infer that venereal affections were very prevalent, and that eruptions usually attendant upon them may have been often confounded with cutaneous diseases arising from other causes. The term syphilis, the derivation of which is quite uncertain, was no doubt applied in the times to which we allude, to designate epidemic exanthematous affections, though since confined to those morbid symptoms arising from impure sexual intercourse. It is our opinion that new diseases much less rarely occur, than that old ones are lost sight of, or cease to be clearly recognized, either from changes in the nomenclature of our predecessors, or the obscurity of the terms and imperfect descriptions they have left us. Upon these suppositions only can we satisfactorily explain the accounts we have of syphilis prevailing as an epidemic, and acquiring successively the popular designations of Neapolitan, French, and Spanish disease.

We will conclude our remarks upon this part of M. Des Brus's treatise, by observing that the proofs of the existence of all the forms of syphilis prior to the discovery of America, are sufficient to overwhelm all the arguments to the contrary ever brought forward by Schmauss, Girtanner, Astruc, and all their adherents. Those who feel curious to inquire more into the subject, we would particularly refer to the work of M. Des Brus, and also to the able "Historical and Critical Observations on Syphilis," by Jourdan, a translation of which into English, may be found in the third volume of the Philadelphia Journal of the Medical and Physical Sciences.

We have now arrived at a subject much dwelt upon by M. Des Brus.

and one for which we anticipate much greater opposition, than any other topic connected with these investigations—namely, *the non-existence of the venereal virus.*

The existence of such a matter or substance as that called the venereal virus, has until very lately been so firmly and universally believed, that persons venturing to doubt it ran more risk of being denounced as visionary and sceptical, than of attracting any respectful attention to their opinions. When it is considered that the actual being and presence of a specific poison, constitutes the basis of all former pathology and practice in syphilis, it may be readily conceived that the consequences of the contest are of the highest importance, as the establishment of the new doctrine would be like erasing from a tablet the useless records it contained.

But lest it might be inquired what we mean by the term *specific virus*, we will anticipate the question by answering, a morbid secretion, which applied to the animal system, produces a peculiar action, similar to that by which it was generated, manifested by a regular and uniform train of symptoms. As examples we refer to the secretions in the well known diseases variola, vaccina, and psora.

Let us see what success is likely to follow the reasoning, observation and experience which may be advanced to disprove the existence of that morbific matter asserted to have been first introduced into the old world from America, and which has been characterized by various writers as an inflammatory, acrimonious, corrosive, acid, alkaline, glutinous, sulphurous, and even electrical substance.

The first argument advanced by M. Des Brus in favour of his opinion is founded upon a position laid down by Cicero in his second philippic, namely, "that nothing is less worthy of a reasonable man than to oppose against one with whom he may have a dispute, an opinion which the other has only to deny in order to stop short all opposition in his opponent, and to show that it ought to be rejected, seeing that it only reposes upon a fable destitute of all proof." Upon the strength of this classic logic, M. Des Brus calls upon the believers in a virus to demonstrate its existence, and to say what it is, and where it is.

The *contagion* of venereal affections affords, perhaps, the strongest proof in favour of the existence of a specific venereal virus. But it must be observed, that the form communicated is not, as has been strenuously maintained, always of the same character with the original affection, individuals contracting their diseases from the same source, often presenting the most different trains of symptoms. As well, M. Des Brus thinks, may it be argued that the coryza attending

inflammation of the mucous membrane of the nasal cavities, depends upon a specific virus, because the secretion applied to the same membrane of healthy persons, will, as he asserts, excite a similar affection. The same results follow the application of a morbid secretion from any other mucous surface when applied to one in a sound state. That of the eye in purulent ophthalmia is adduced as a familiar illustration. In these cases it is manifest that the secretory organs are deranged and their discharges altered, and that they acquire from inflammation qualities sufficiently acrimonious to produce an irritation in the parts to which they are or may be applied. Why, it may be asked, may not the same thing take place in venereal irritations.

M. Des Brus cites very many interesting cases to prove that the syphilitic affections propagated to several sound persons who may have had connexion, about the same time, with the same infected person, unlike what might be expected from the direct application of a specific poison very often differ greatly from each other. Of the truth of this our own observation has furnished the most ample evidences. Appealing, however, to the examples cited by him, we shall at the same time present his rationale as illustrating very clearly the views he takes of the subject.

"Six friends," says he, quoting from Vigaroux, "after a hearty repast, had connexion with the same girl, who communicated the pox to them all. The disease, however, manifested itself among them with different symptoms. Two of them had chancres and buboes; two others, gonorrhœa; the fifth had a chancre; and the sixth a single bubo. One of those who had chancres and buboes was soon cured by a regular treatment with frictions: the other with the same affection, had his bubo to suppurate, the skin to separate, become spongy and perforated. He became dejected, salivation took place; the submaxillary glands became engorged; the discharge from the chancre ichorous; he lost his strength, and sunk. He who had only a chancre, burnt it out, and experienced no inconvenience after marriage, his children proving healthy. Of the two who had gonorrhœa, one experienced it in its mildest form, whilst in the other, on the contrary, it was attended with exceeding virulence, and resisted the efforts made to cure it, for ten months."

In relation to this case, M. Des Brus observes—

"In vain may we seek to account satisfactorily for these different phenomena, otherwise than by referring to the different excitability of the several patients, and to the various degrees of inflammation occasioned by the connexion. This affords the only rationale, which will apply equally well to them all, whatever may have been the irritating principle which produced the disorder. Let us suppose that these six individuals had been exposed to the contact of certain vegetable juices, alkalies, acids, corrupted animal matters, etc. The effects produced we should account for thus:—With two of the persons alluded to, the irritation occasioned by the excitant predominating upon the

extremity of the mucous coat of the urethra, would cause this to inflame, and it being the property of inflammations of the mucous surface, to give rise to a mucous discharge in greater or less abundance the affection we call gonorrhœa would have been produced. One of these patients presenting a greater excitability of this part than the other, or the inflammation having manifested itself with more violence, the result was a difference in the intensity and duration of the disease. With two others, either from greater sensibility of the glans, or the more intimate application of the irritating fluid to this part, ulcers were produced upon it; the irritation propagated along the lymphatic vessels to the inguinal glands, gave rise to a bubo, in the same manner that we see swellings of the sub-maxillary glands occasioned by salivation. In the first the symptoms were perhaps dissipated by the mercurial treatment producing upon the excretory organs and lymphatic system in general, a true revulsion to them of the irritation seated upon the genital organs. With the other, either because the glandular inflammation was too profound, or that it had been aggravated by the stimulus of the mercury, suppuration took place, the cellular sub-cutaneous tissue was destroyed, and the skin left without support, sunk down—a prey to disorganizing inflammation, it wasted away, becoming thin and perforated. On the other hand, irritation of the salivary organs was produced by the mercury, the mouth became tumid, as well as the sub-maxillary glands. The gastric viscera participated in the excitement as happens on ordinary occasions. Hence loss of strength, ichorous suppuration, dejection, and finally death. With the sixth, the excitement of the penis not sufficient to establish an ulcer, was nevertheless capable of exciting sympathy in the inguinal glands, which, predisposed to irritation, swelled in the same manner that they are seen to do after a prolonged march."

Should the believers in the specific virus attempt to explain the varied effects observed in the cases just related, by ascribing them to the different dispositions of the individuals, we would reply, such indeed *may have been* the case, but why resort to obscure hypothesis, to explain what may be satisfactorily understood without.

But how can we resist the positive proofs of a virus furnished in the experiments of Mr. Hunter, who, by inoculating with venereal matter, produced that disease in sound persons. Those who will take the trouble of examining the records of these experiments with attention, will not, we think, feel bound to believe in the existence of a specific venereal virus. All the results observed will admit of the easy mode of explanation which has already been applied so satisfactorily by M. Des Brus, to the solution of other cases. Many experiments of inoculating with venereal matter, similar to those of Mr. Hunter, have been made in France, by MM. Dubled, Bertin, Dupau, Des Brus, and others, which show that the matter of gonorrhœa and chancres rarely produce any lasting effects, when applied and even inserted into other tissues, except those with which they usually come in contact during the act of coi-

tion. Venereal pus, it is true, *may* become the cause of an ulcerative inflammation, but under these circumstances the phenomenon is *purely local*, and like other inflammations, may give rise, either through sympathy, or continuity of tissue, to various changes in the neighbouring or distant organs.

It would appear that the believers in a virus have in France, lately availed themselves of the unhappy results of an experiment by inoculation, for the support of their position, which, like certain religious appeals, are calculated to take stronger hold on the prejudices and feelings, than on the reason. This circumstance we shall relate in the words of M. Des Brus, giving at the same time his comments.

"In opposition to my reported experience, there will doubtless be cited the results, obtained by three young physicians who inoculated themselves, which have been pompously announced in the medical journals. Each of the three, it is said, made a puncture in the arm with the point of a lancet, charged with syphilitic matter. In one, swelling of the axillary glands took place, which, treated by antiphlogistics alone, went on to suppuration, and produced considerable injury of the axilla. In the second, the puncture inflamed and ulcerated; a chancre presenting *all the venereal characteristics*, established itself, and made extensive ravages. But admire how far the love of the marvellous will carry us: it is pretended that this young man, after consulting a professor of the medical school, who told him that the ulcer was *venereal*, and that he must resort to mercury, went into the hospital and opened the crural artery!!

"What, this young physician, who, inflamed by the laudable desire of throwing light upon an obscure point of science, had not scrupled to try upon himself an experiment reputed dangerous, and who had been led by observation to question the evidences of a venereal virus, to lose both reflection and courage so as to be driven to commit suicide; merely too because a professor had told him he had the pox! And what great matter was there even if it had been so? Could he not have resorted to mercury for its removal, if, confiding only in the edicts of the professor, he was not able to rid himself of the idea that the employment of that medicine was absolutely necessary? Or, was he determined by shame or vexation not to survive a defeat? The supposition cannot be admitted, for what did the ulcer with which he was affected prove? Nothing more than that the pus applied had acted as an irritant. Now it is not probable, that before submitting to the inoculation, he could have been ignorant of the circumstance, that inflammation often gives to the fluids secreted on parts where it is seated, acrimonious and irritating properties: that accidents often occur from scratches made by instruments impregnated with the sanious humours of a wound or dead body: and he ought to have been familiar with many facts similar to the following, reported by M. Bégin. Opening, with M. Broussais, the body of a man who had died of gastro-enteritis, accompanied with adynamic symptoms, M. Bégin experienced an insupportable sensation of burning, in consequence of having touched the intestinal contents, and had likewise a considerable swelling of the hand, as well as an abscess upon one of his fingers, although neither he nor M. Broussais, *who experienced similar inconveniences*, had been wounded by the knife. Every thing, therefore, conspires

to render it likely, that the subject of this experiment was driven to suicide by other causes."

The case of the third young man is reported to have presented *divers positive symptoms of a venereal infection.*

"It is greatly to be regretted," says M. Des Brus, "that these young men have offered no conclusions upon their observations and experience. Their testimony would then have had more weight, and might have served to confirm or disprove the conclusions which it has been attempted to draw from them."

M. Des Brus thinks that the symptoms exhibited in these three experiments, do not at all establish the existence of a virus. That, in the axillary engorgement of the first, there was nothing extraordinary. Among other circumstances referred to, in order to explain the phenomena, he cites some of interest from his own personal experience. On one occasion, having received, whilst opening a dropsical subject, a slight cut upon one of his fingers, pain in the arm soon ensued, together with violent inflammation, and swelling of the glands in the axilla, which were subdued by leeches and other appropriate means. These symptoms were attended with an acute gastro-enteritis, produced from the ganglionic irritation, referred to the mucous coat of the intestinal canal, succeeded by a pustular cutaneous eruption on the trunk of the body, so that it was only necessary that he should have been inoculated with venereal matter, to have constituted a case of syphilis. All this and more is adduced, to prove that the axillary engorgement in the young experimenter, did not proceed from the introduction of a specific virus.

The ulcer which manifested itself on the second, was nothing uncommon, since a splinter, or the acrid juice of any vegetable might have produced the same effects. As to the characters of syphilis, M. Des Brus demands what else they are than the ordinary products of irritation. So much, therefore, for the evidences of a virus furnished by inoculation.

It has been our own lot to witness many instances, in which symptoms have occurred from other causes, not to be discriminated from those ensuing to venereal affections taken in the usual way. Of these we will take the liberty of mentioning one, the case of a widow lady of cachectic habit, who was suddenly attacked with an alarming sloughing ulcer just above the heel of the right foot. After the loss of considerable substance, the ulcer healed under the use of generous diet and tonics. About two weeks afterwards, however, a swelling took place in one of the right inguinal glands, which proceeded rapidly to suppuration, and on being opened, discharged most abundantly a thick pus. This soon got well under the treatment previously prescribed.

About a week or ten days after the removal of the inguinal affection, she was attacked with severe colick, accompanied with spasms, and strong indications of a disordered condition of the digestive organs, soon after recovery from which, she went into the country, staid about three weeks, and returned apparently in better health than she had enjoyed for a long time. In a few days, however, she complained of soreness about the bridge of the nose, where there existed a considerable redness. A wash of lead water and laudanum was directed externally, and internally the decoction of sarsaparilla, along with colomba. A plain nutricious diet was enjoined. The soreness was relieved and the redness disappeared in the course of three or four days, and we now thought every thing right again. In about three weeks, however, we were called upon by the same lady to witness a papular eruption on the hands and arms, which, however, soon disappeared, and proved the finale. We regard this case as illustrating most happily the chain of connexion subsisting between the various tissues and organs of the body, and the manner in which impressions are transmitted from one to another. In a cachectic state of the system, produced most probably by a derangement of the digestive organs, the heel became the focus of morbid irritation, probably first set in motion there by some injury too slight to be noticed. From thence it was propagated successively to other parts, according to laws regulating the phenomena of diseases. Had we not witnessed the primary affection, and our patient been in any degree susceptible of a suspicion of venereal indulgence, (which was altogether impossible,) no human power, we believe could at that time have convinced us, that the venereal virus was not at the bottom of the case. Here then we have the usual consecutive phenomena attendant on venereal affections, without the presence of a specific venereal virus.

All who have possessed opportunities of paying much attention to venereal affections, must have frequently witnessed the transition of the inflammation and irritation attending upon simple gonorrhœa to the glandular system producing soreness in the lymphatics of the penis; swelling of the inguinal glands, testicles, etc. rheumatic affections of the muscular and membranous tissues, irritation of the mucous membrane of the fauces and other parts, cutaneous affections, etc. in fact, all the symptoms commonly observed to follow venereal sores. Now, if it can be demonstrated that a similar train of symptoms may be produced by other means, and entirely without the agency of venereal matter, it results that there is no necessity for the agency of a specific virus, in order to explain the rationale of syphilitic affections. We have seen a simple warty excrescence which ex-

isted on the prepuce for several weeks as the only evidence of an impure connexion, converted by the injudicious application of caustics and other means used for its removal, into a foul and irritable ulcer, deep, livid, surrounded by callous edges, and withal exceedingly obstinate to heal, giving rise subsequently to a tedious and inveterate train of constitutional symptoms. And yet such warts under ordinary circumstances are readily removed by simple applications, and seldom or never, according to our experience, occasion any other than mechanical inconvenience, unless some such violence as that above described, has been applied to the tissue. We have therefore no hesitation in believing that under such circumstances it is not a virus which does the mischief, but irritation and inflammation roused and determined in its natural direction, a doctrine which we think applicable alike to all manner of venereal affections.

M. Swediaur, the firm champion of a specific venereal virus, has reported a most admirable experiment performed upon his own person, which we think should have taught him different views from those he maintains in his work upon syphilis. By injecting a strong solution of sal. ammoniac a very little way into his urethra, he produced thus artificially a most virulent gonorrhœa, attended with a purulent discharge, ardor urina, nocturnal erections, chordee, irritable bladder, and all the usual concomitants. He was six weeks in performing a cure. The case, which is detailed at considerable length in his book, is well worth referring to.

Should we be asked whether we think M. Swediaur, with this artificial affection, was capable of communicating disease to a female by having connexion with her, we would unhesitatingly answer, yes; just as effectually as if he had originally derived it from venereal intercourse.

We find in books the most prolix descriptions of the various sores observed to proceed from impure coition. The nicest distinctions have from time to time been drawn between the genuine syphilitic and the spurious, and ingenious classifications founded upon their *sui generis* characteristics. An immense deal of talent and industry have been thrown away upon such fabrications. What has been styled the true primary syphilitic ulcer has been delineated with great accuracy by the genius of Hunter. And yet a late writer, Mr. Carmichael, who has admitted the distinction made by Mr. H. implicitly, with the most ample opportunities afforded him as chief of a large hospital dedicated to venereal complaints, has not been able with all his observation to find more than two or three legitimate Hunterian chancres in many years. It is therefore useless to comment upon the inutility of such

a distinction, particularly since it has been demonstrated over and over, that this kind of ulcer, contrary to the positive assertions of Hunter, Carmichael, and many others of great authority, can, like every other venereal sore, be cured without mercury.*

Upon the whole, the pretended characteristics of venereal affections which have served to edify the credulous faithful, and confuse the student and candid inquirer after facts, may be readily demonstrated to be nothing more than the ordinary effects of irritation and inflammation, modified by circumstances now well understood.

"The ulcer of the teguments of the penis, whatever may have been its origin, seldom bears any resemblance to that of the glans. That of the glans differs ordinarily from that of the prepuce, whilst those of that envelope frequently exhibit great variety of appearance, even at the same time, and in the same patient."

All this variation may be referred to the different degrees of intensity of the irritation or inflammation, and the length of time the ulcers may have existed. Their physiognomy is susceptible of great and rapid variation. These are points to which M. Des Brus has invited particular attention, and which he says will be ever confirmed by close observation of the phenomenon which succeed each other during the development of the ulcers. The original and progressive appearances of these primary affections are thus described by him:—

"They ordinarily proceed," says he, "either from a slight excoriation produced during coitus, from small white or reddish serous vesicles of the size of a millet seed or pin-head, and of an aphthous appearance, or from a minute pustule on the skin. These vesicles break, the fluid which they contain escapes, and sometimes we find the denuded surface exactly like that produced by the application of a blister, whilst at others it is of a milky white. The inflammation progressing, the sore becomes larger and deeper, extends more or less to other parts, and soon presents an aspect varied by circumstances. Sometimes the edges are thin, pale, and level with the surrounding parts; at others, on the contrary, they are hard, engorged, and elevated above the sore, particularly after the inflammation has lasted for some time: sometimes the centre appears red and granulated, or pale, fungous, and raised above the margins: sometimes excavated, and of a yellowish colour. In some cases a corrosive matter is secreted. The surface is at times perfectly even, or striated, ragged, and of a stellated appearance. Round or oval upon the prepuce, they are generally irregular upon the glans, elongated upon the frænum, round

* Notwithstanding, however, the distinctions and classifications adopted by Mr. Carmichael in his treatise upon venereal diseases, the practice which he inculcates, is upon the whole more consonant to reason and the results of recent investigations, than that laid down in any other English book with which we are acquainted.

or oval upon the skin. The irregularity in form generally augments with the progress they make."

After remaining a certain time, the ulcer generally produces a hardness of the part upon which it is situated. This hardness is sometimes like cartilage, and—

"I have often," says he, "seen the base of the prepuce forming a kind of firm and solid ring around the glans. The number of sores varies infinitely: sometimes there is only one, and then again a great many. The chancre of the genital organs is occasionally observed healing on one part, and at the same time attacking another, under every treatment that may be resorted to."

In fact, it cannot we think be denied, that all the appearances designated as the pathognomonics of primary syphilis have occurred, and may occur without the application of a specific virus. Neither is it to be doubted that those have greatly deceived themselves who have drawn such nice distinctions relative to the infallible characteristics, some of whom have even gone so far as to pronounce their dogmatical opinions upon the bare evidence of the odour exhaled by the pus. The truth is, many practitioners have themselves been the authors of the pathognomonic symptoms, which they have wrongfully charged upon the visionary existence of a *specific virus*, the most simple and harmless sores, having been converted by means of improper washes, ointments, escharotics, general treatment, &c. applied according to a certain routine, into irritable, obstinate, frightful, and most mischievous ulcers, which have not only committed ravages upon the tissues where they were first located, but brought other tissues successively into disorder until finally the whole system has been invaded.

The evidence of a venereal virus drawn from the occurrence of buboes, however strong it may seem at first blush, is altogether without weight when candidly investigated. Their presence in fact proves nothing more than that the irritation has extended from the tissues of the penis, either from continuity or sympathy, to the tissue of a neighbouring gland. They originate from similar causes in other parts of the body, most commonly in the axilla from some affection of the superior extremity or breast. The diagnostics, designating this affection as of a *genuine* syphilitic character, as it is termed, are equally fallacious with those applied for the same purpose to chancre. The labours of Astruc and all his followers in this work, when investigated with attention and candour, will be found vain and delusive.

Like attempts have been made to fix the characteristics of genuine syphilitic gonorrhœa, so that it may be distinguished from the spu-

rious kinds often said to be mistaken for it. But notwithstanding the great ingenuity displayed in the task, every unprejudiced person who will make the investigation for himself, will come to the conclusion that all the phenomena of gonorrhœa depend upon different degrees of urethral inflammation.

"Thus," says M. Des Brus, "in regard to inflammations of all other parts, we constantly observe a difference in the intensity of the pains, in the derangement of the functions, and in the colour and qualities of the excretions."

It is precisely the same case with gonorrhœa, which originating from similar causes and sources with the other forms of syphilis is, like them a genuine phlegmasia, curable upon the same general principles. Existing usually without any solution of continuity in the diseased tissue, it frequently gets well of itself, and seldom, comparatively speaking, affects the other tissues of the body to any considerable extent, unless when aggravated by peculiar circumstances. Then indeed its effects are transferred to other parts, and it runs its course after the manner of other venereal forms, attacking the testicles, inguinal glands, the mucous membranes of other parts, the muscles, fasciæ, skin, &c. Who that has frequently been called upon to treat gonorrhœa, has not witnessed sudden transition of the irritation from the urethra to distant parts, the ligaments and joints for example, where it has raged with a violence demanding the use of the most powerful antiphlogistics. In such cases the morbid phenomena scarcely perceptible in the original seat, have as speedily returned to it again whilst the affection of the other parts has ceased. Now, who will contend that the virus in these cases has been translated in the space of a few hours, first to distant parts possessing a very obscure and white circulation, and again in as short a time retreated to its primitive situation.

Such, however, is the force with which early impressions and associations are stamped upon the mind, that it is long before we begin to doubt, and still longer before we come to disbelieve in the existence of things and circumstances relative to which we have formed and long entertained distinct conceptions. It is just so with regard to the venereal virus. All who acknowledge its existence, and the number who do not hold with the hypothesis we are persuaded is at present extremely limited in this country, doubtless think that they have a clear idea and perfect knowledge of what it is. But should any of these set out with candour and something like mathematical scrutiny, in search of the object of their belief, we are greatly mistaken if they would not meet with more difficulty than they might imagine, in demonstrating to the external senses, any substance or matter produced

by venereal affections, so distinct in its nature and properties from ordinary animal secretions, as to deserve the appellation of *specific virus*, or bear a fair comparison with what are universally recognized as such, namely, those of small-pox and vaccination.

We propose, on another occasion, to continue our exposition of the subjects of M. Des Brus's treatise, promising to dwell more particularly upon those parts of it relating immediately to the practice founded upon the new doctrine. E.

ART. XVI. *An Essay on the Ultimate Principles of Chemistry, Natural Philosophy, and Physiology, deduced from the Distribution of Matter into two Classes or Kinds, and from other Sources.* By LARDNER VANUXEM.—Part I. Octavo, 91 pp.—Philadelphia, 1827.—Carey, Lea and Carey.

THE theories presented by Professor VANUXEM in this essay, are founded, as the title announces, upon a distribution of matter into two distinct classes; and this distribution is proposed in the commencement of the work, with such an air of novelty, that an incautious reader might be led to suppose that it possessed some originality. This, however, is not the case; the proposed distinction being already adopted by all writers on chemistry. The two kinds of matter alluded to, are called by THOMSON, confinable and unconfinable; by DAVY, ponderable and etherial; and by our author, concreting and non-concreting.

The general properties of these two classes are stated in the following extract:—

"As the one class of particles is known by its tendency to form concretions, or bodies, whose parts cohere together, and are tangible, we have attraction, or gravitation, as its inherent principle, or attribute: and as the other class of particles, on the contrary, exhibit no concretions, nothing tangible, we must conclude that repulsion, the antagonist power to gravitation or attraction, is the inherent principle, or attribute of the non-concreting class. It is in virtue of these two opposing principles or attributes, by which each class of particles is, as it were, held in equipoise or neutralization, when the two kinds of particles act upon each other, that the peculiar attributes belonging to each kind of particles, are enabled to come into action; from whence result all the phenomena which constitute the physical world."

In all this there is certainly nothing new; nothing but what is already familiar to every student of chemistry. But in considering caloric as a cause of repulsion between the particles of ponderable

matter, our author conceives that chemists have committed a gross mistake, which he states and confutes as follows:—

"It is asserted by writers on chemistry and natural philosophy, that caloric, meaning thereby caloric of temperature, is the sole cause of the expansion of bodies, (common matter,) and as a consequence, bodies without caloric must be solid. Assuming these premises, it follows, that as the atmosphere diminishes in temperature as we recede from the surface of the earth, (upwards,) there must be a point at which no caloric exists: consequently the matter of the atmosphere there must be of great density; if not absolutely in the solid state. The absurdity of this conclusion is evident, from all our positive knowledge of the atmosphere; the truth, (incontestible,) being that its rarity increases with its height, and its density in the inverse degree. The conclusion in question is therefore a paradox, and clearly shows that from these principles we know nothing of the real cause of the expansion of gaseous bodies."

We freely acknowledge the justice of this conclusion, but we must be permitted to declare, that we have never met with any writer on chemistry or natural philosophy, who asserts that caloric of temperature is the sole cause of the expansion of bodies. On the contrary, every author, from the time of Black, has considered *latent* heat as the cause of the fluid and gaseous state, and the very explanation which is given by our author of the atmospherical paradox, may be found in an article on caloric, in Dr. Ure's dictionary, which he quotes in another part of his book.

In a paragraph immediately following that which we have just quoted, our author observes a curious coincidence which he erects into a general law, and which it is proper that we should notice. It is that the latent heats of water at 32°, and of steam at 212°, are directly proportional to their respective temperatures. In fact, supposing the first to be 140°, and the second 927°, we have 32 : 140 : : 212 : 927, very nearly. We have called this a curious coincidence, and it is not the less so perhaps from the circumstance of its being purely accidental. As the scales of our thermometers have no reference to a natural zero, it is evident that the ratio of the numerical temperatures which they mark is not that of the real temperatures. If we suppose the zero of Fahrenheit to be placed 100° below its present station, the freezing and boiling points of water would be 132° and 312°, and the above proportion would be changed into the following:—132 : 140 : : 312 : 331; but, according to the author's hypothesis, the last term should still be 927. If we use the Centigrade or Reaumur's scale, the first term of our proportion will be zero, and consequently the last infinite; a conclusion palpably absurd.

It is not our wish to find fault, but we meet with a theory on the next page, to which we cannot give even the sanction of our silence.

"That sensible heat, or caloric, increases as the density of the atmosphere increases, follows of course, and may explain the rise of temperature, when descending into the interior of the earth, when below the point of no variation. This explanation was first given by Dr. Cooper. (Vide Silliman's Journal, vol. iv. p. 243.) A consequence of some importance in the theory of the atmosphere, of the sun, and of comets, follows from the increase of the temperature of the atmosphere with its density. Gay Lussac found, that atmospheric air, when condensed so as to occupy about one-fifth of its volume, became luminous; so that any globe, whose atmosphere is equal to the density of the air in the experiment mentioned, will be permanently luminous; the degree of light increasing as the density of the atmosphere increased."

It seems to us, that these theories are founded upon a misapprehension of the facts. That sensible heat is evolved when air is condensed, and absorbed when it is rarefied, is undoubtedly true; but it is certainly no less true, that these states of temperature are not permanent. In a short time, the rarefied air, under the receiver of an air-pump, acquires the temperature of the surrounding atmosphere; and air under strong compression, very soon parts with its excess of heat, and loses its light immediately. Now it is evident, that if this be the case, the theories which we have quoted, must necessarily fall to the ground.

The author of the essay next proceeds to consider his non-concreting matter, in that state in which it is uncombined or free, and to which, "for want of a better term," he gives the name of "astronomic, gravitating, radiating, or planetary." He supposes the earth to be surrounded by an atmosphere of this etherial matter, subjected, like the air, to the force of gravity, and, of course, having its particles "increased in number and proximity to each other, in proportion to their proximity to the earth." From this "ample store of quiescent repulsive matter," he supposes the caloric and light to be derived, which are, "as it were, called into existence," by friction, by chemical combination, by the explosion of gunpowder, &c. Our readers will judge, in the first place, how far this view of the subject can be considered as new; and, in the second place, how far it affords a specific explanation of phenomena, which have long continued to embarrass the most ingenious philosophers.

The next subject discussed in the essay, which we think it important to notice, is presented in the following extract.

"It has long been demonstrated that attraction is as the weight of common matter: now repulsion, or the antagonist force of attraction, as has already been shown, being inherent to ethereal matter, its action or force must be in the ratio of the levity of common matter. This being the case, it follows that those particles of common matter which are heaviest, will have the least attraction,

for example, (using caloric to represent the class,) for caloric; as affinity is counteracted by gravity or the concreting power, so on the contrary, those particles of matter which are lightest, attraction of gravitation or the concreting force being less, will have the greatest affinity for caloric; or, in other words, the two forces acting upon each other, the action of the non-concreting attribute will be greatest, where the concreting attribute is feeblest, and feeblest, where the concreting attribute is greatest; or, using the language of chemistry, the capacity for caloric will diminish, as the weight of the atom increases, and increase as the weight of the atom decreases.

"This law, which follows from the action of the two classes upon each other, giving it its simplest expression, namely, *the forces being in inverse ratios to each other*, is fully confirmed by experiment; and it is to MM. Dulong and Petit, that we owe the important facts, whose consequences, it appears, were overlooked, or lost, in a conclusion as singular as it was erroneous. These gentlemen made a number of experiments with different metals, for the purpose of ascertaining their specific heats; and to use the language of Dr. Ure, (Dictionary of Chemistry, article caloric,) 'their result has disclosed a beautiful and unforeseen relation, between the specific heats and primitive combining ratios, or atoms of the metals; namely, *that the atoms of all simple bodies have exactly the same capacity for heat*. Hence the specific heat of a simple substance, multiplied into the weight of its atom or prime equivalent, ought to give always the same product.'

"In examining the table of Dulong and Petit, I found that no conclusion like the one given could be deduced: that the *relation* stated, arose from confounding the product of the specific heat and weight of atoms, with the capacity of the atoms for heat. Whereas, the true and self-evident result of the experiments in questions, is one not only of great beauty, but of the greatest importance in science, and confirmatory of the action of the two classes upon each other, as has already been mentioned. The conclusion being *that the capacity of atoms for heat increases in the ratio of their levity*, and decreases in the ratio of their density, and it is to this cause solely *that their product is a constant number*."

Here we are obliged, once more, to differ from our author, and to acknowledge our accordance with the "singular and erroneous conclusion" of MM. Dulong and Petit. It must be observed, that the specific heats found by these experimenters, correspond to equal weights of the substances compared. Thus the specific heat of a pound, (for example,) of water being 1, that of a pound of lead is .0293, and that of a pound of sulphur is .1880. If now, we wish to compare the specific heats of two pounds of lead, and three of sulphur, we must multiply the corresponding tabular numbers by 2 and 3 respectively, and the proportion sought will be that of the products .0586 and .5640. In like manner, if there be two masses of the same substances, of which the weights are in the ratio of 12.95 to 2.011, their specific heats will be in the ratio of $.0293 \times 12.95$, to $.188 \times 2.011$, or of .3794 to .3781, that is, they will be sensibly

equal. Now the numbers 12.95 and 2.011, are the atomic weights of lead and of sulphur, and this example may serve to illustrate the law established by Dulong and Petit. Indeed, it must be evident that the specific heat of an atom must be directly proportional to the specific heat of any mass composed of such atoms, and inversely proportional to the number of atoms in that mass. But the greater the atomic weight of any body, the fewer elementary particles will it contain. So that, finally, the specific heat of the atom will be directly proportional to that of the mass, and also to the atomic weight, and will therefore be measured by the product of these two quantities.

It is proper to remark in this place, that the extraordinary coincidence mentioned above, has been proved only in certain solid bodies, and that the deductions drawn from it by our author, and by Dr. URE, even if correct, are far more general than the experiments warrant. This is fully shown by the following table, including three simple gases, examined by MM. BERARD and DELAROCHE, and the simple liquid mercury, examined by MM. DULONG and PETIT.

	Specific heat, that of water being 1.	Weight of atom.	Product, or Specific heat of atom.
Oxygen	.2361	1.000	.2361
Hydrogen,	3.2936	.125	.4116
Nitrogen,	.2754	1.75	.4819
Mercury,	.033	18.	.594

According to the theory, these products ought to be equal to .3753, (the mean specific heat of the atoms of solid matter,) and to one another, which is far from being the case.

Upon the hypothesis of our author, which we have thus considered, and which we think we have proved to be without foundation, are built nearly all the remaining speculations of his essay. It is explained at large, presented in every point of view, illustrated by diagrams, and finally applied to the explanation of the laws of chemical action, and of the phenomena of electricity, light, magnetism, and *life*.

From the task of pursuing a false theory into all its recesses, we must ask to be excused. It would be both unprofitable and unpleasant. The fundamental principles of an essay, coming from a most respectable source, and looked for with high expectations, it was our duty, as reviewers, to lay before our readers, and to discuss with freedom. This we have now done, and here our task must end.

BIBLIOGRAPHICAL NOTICES.

1. ***Reports of Medical Cases, selected with a view of illustrating the symptoms and cure of Diseases, by a reference to Morbid Anatomy.*** By RICHARD BRIGHT, M. D., F. R. S. &c. Lecturer on the Practice of Medicine, and one of the physicians to Guy's Hospital. London, 1827. 4to. pp. 231, with sixteen coloured plates.

This splendid volume, the commencement of a work to be continued on the same plan, contains reports of cases treated at Guy's Hospital, London, with beautiful, and for the most part very accurate representations of the morbid conditions found to exist in certain organs in particular diseases. There is no necessity, at the present day, of pointing out the immense advantages, which a large and well regulated hospital affords for studying diseases, or the value of clinical reports; they are sufficiently estimated; we shall, therefore, without preamble, give a sketch of the plan of the present volume, and notice those opinions that appear to be original with its author, and such of his observations as we think will be most interesting to our readers.

The first twenty-four cases are intended to illustrate some of the morbid appearances in the kidneys, observable in those who die from dropsical effusions. Dr. Bright asserts that he "has never yet examined the body of a patient dying with dropsy attended with coagulable urine, in whom some obvious derangement was not discovered in the kidneys;" and on the contrary, where the dropsy has depended on organic change in the liver, even in the most aggravated state of such change, no diseased structure has generally been discovered in the kidneys, and the urine has not coagulated by heat. Dr. B. conjectures the existence of three varieties of organic derangements of the kidneys, in dropsy, all generally attended with a decidedly albuminous character of the urine. In the first, the kidney looses its usual firmness, becomes of a yellow, mottled appearance externally; and when a section is made, nearly the same yellow colour, slightly tinged with gray, is seen to pervade the whole of the cortical part, and the tubular portions are of a lighter colour than natural. The size of the kidney is not materially altered, nor is there any obvious morbid deposit to be discovered. This state of the organ is sometimes connected with a cachectic condition of body, attended with chronic disease, where no dropsical effusion has taken place either in the cellular membrane, or in the cavities of the body. When this disease of the kidneys has gone to its utmost, it has appeared to terminate by producing a more decided alteration in the structure; some portions becoming consolidated, so as to admit of very partial circulation; in which state the surface has assumed a somewhat tuberculated appearance, the gentle projections of which were paler than the rest, and scarcely received any of the injection which was thrown into the arteries.

In the *second* variety, the whole cortical part of the kidney is converted into a granulated texture, and there appears to be a copious, morbid, interstitial de-

posit of an opaque white substance. This in its earliest stage produces externally, when the tunic is taken off, only an increase of the natural, fine, mottled appearance given by the healthy structure of the kidney; or under particular circumstances, gives the appearance of fine grains of sand sprinkled more abundantly on some parts than others. On making a longitudinal section, a slight appearance of the same kind is discovered internally, and the kidney is generally rather deficient in its natural firmness. After the disease has continued for some time, the deposited matter becomes more abundant, and is seen in innumerable specks of no definite form, thickly strewed on the surface; and on cutting into the kidneys these specks are found distributed in a more or less regular manner throughout the whole cortical substance, no longer presenting a doubtful appearance, but most manifest to the eye without any preparation; and other cases less advanced requiring maceration in simple spring water for a few days to render them more obvious. When this disease has gone on for a considerable time, the granulated texture begins to show itself externally, in frequent, slight, uneven projections on the surface of the kidney; so that the morbid state is readily perceived even before the tunic is removed. The kidney is generally rather larger than natural; sometimes it is increased very much, but at other times it is little above the natural dimensions.

The *third* variety, the kidney is quite rough and scabrous externally to the touch, and rises in numerous projections, not much exceeding a pin's head, yellow, red, and purplish. The form of the kidney is often inclined to be lobulated, the feel is hard, and on making an incision the texture is found approaching to semi-cartilaginous firmness, giving great resistance to the knife. The tubular portions are observed to be drawn near to the surface of the kidney: it appears in short like a contraction of every part of the organ, with less interstitial deposit than in the last variety.

Five plates of diseased kidneys are given, representing the varieties above described.

Besides these three forms, passing almost into each other, and usually attended with decidedly coagulable urine, Dr. B. says that there are two other deranged conditions of the kidneys in which coagulation is sometimes observable, but in a very subordinate degree, and often though observable one day is quite lost on another. One of these morbid states consists in a preternatural softness of the organ; the other in the blocking up of the tubercular structure by small portions of a white deposit, bearing the appearance of small concretions. In the former a corresponding loss of firmness has been observed in the structure of the liver, and the spleen and the parietes of the heart, the action of which organ had been observed during life to be deficient in force. In the other cases, besides the obstructed state of the uriniferous tubes, the whole structure of the kidney has been somewhat deranged, the cortical portion firmer than natural, and the tubular part has lost the regular convergency of the vessels, so that they have assumed a waved direction.

The object of Dr. B. in the foregoing statements, is to establish the fact, that certain dropsical affections depend more on the derangement of the kidneys themselves, than has been generally supposed; and that the albuminous nature of the urine frequently points out the particular cases, in which these organs are the seat of disease.

Dr. B. does not offer any thing satisfactory in relation to the treatment of these diseases of the kidneys; he doubts whether it be possible, after a decided organic change has taken place in this organ to effect a cure, or even to give any great relief, but where the mischief is less rooted, much may be done. In the early stages, before organic changes have taken place, two indications are to be fulfilled.—1st. To restore the healthy action of the kidney. 2d. To guard against dangerous secondary consequences, consisting in inflammatory affections, more particularly of the serous, sometimes of the mucous membranes, and in the effusion of blood or serum into the brain. These may destroy the patient at any period of the disease. The treatment therefore must have reference to these impending dangers, and hence in the early stages it will generally be indispensably necessary to have recourse to active depletion, even as a preventive measure; but it is still more necessary, at every stage of the disease, to combat the first symptoms of inflammation, or of cerebral congestion by the free abstraction of blood. A state of great congestion or process of slow inflammation exists in various internal organs, and particularly the kidneys, which produces subsequently their disorganization, bleeding is a most important remedy to restore the healthy condition of these organs.

Purgatives Dr. B. says generally act well, (the elaterium appears to be a favourite with him;) all the saline laxatives which unite a certain degree of diuretic power, are decidedly useful, of these he considers the supertartrateof potash as the most efficacious, and the best mode of exhibiting it when the stomach will admit, is by directing the patient to take a large draught of a mixture containing more of the salt than the water will dissolve, the first thing in the morning: in some cases he trusts entirely to this remedy. "When the stomach will not bear this mode of administering purgatives, the combination of jalap, supertartrate of potash, and a little ginger, repeated from time to time, answers well, or even frequent doses of castor oil have been very useful."

The diuretic remedy most frequently used by Dr. B. is the squill in its different forms: "but it has always acted best when given in combination with hyoscyamus, or when a grain of opium has been prescribed once or twice a day." Digitalis is in some instances cautiously administered.

Dr. B. considers the propriety of employing mercury as one of the most important questions in the treatment of this class of affections. "It is," says he, "consistent with the most successful treatment of many forms of inflammatory disease, that we should have recourse to the valuable combination of calomel and opium; and it is consistent with what is generally deemed good practice, that by the cautious use of mercury we should endeavour to produce more healthy action, and to promote absorption when there is reason to believe that disease has left any chronic morbid action tending to produce unhealthy deposit in glandular structures. Still, however, the cases which have proved most successful in my own practice, have generally been those in which I have rigidly abstained from the use of mercury. In some cases I have seen the good effects of other remedies entirely interrupted by the mercurial action, and I have likewise seen several instances in which the cure, when mercurials have formed part of the plan, has been protracted to a great length; and a great many in which the full action of mercury has not prevented the regular progress of the disease, and its fatal termination. Yet I have undoubtedly seen well-

marked cases of this disease with decidedly coagulable urine, when taken early, in which the free use of mercury to complete ptyalism has not prevented the patients from deriving great, perhaps even perfect relief, from the remedies with which it was combined—these remedies having been bleeding, purging, and diuretics. Independently of the very great doubt which exists as to the advantage to be derived from mercury, there is one circumstance which most materially limits our power of employing it, and that is the violence and rapidity with which the ptyalism often comes on, and the great difficulty which is frequently experienced in restraining its effects: for when the cellular membrane is in the peculiar state of anasarca, induced by this disease, the gums and cheeks are not capable of supporting the process of ulceration, and often pass into a state of gangrene."

The cases and observations on the diseased conditions of the kidney in dropsy are followed by observations on the chemical properties of the urine in these cases, by Dr. Bostock. We cannot conclude our notice of this portion of the work without remarking that we have been led to believe from an attentive perusal of the cases, that if the patients had been treated by depletion more actively and perseveringly employed, and their kidneys less goaded to increased action by elaterium and the stimulating diuretics, that the morbid state of these organs which Dr. B. has described would have less frequently been found.

The next seven cases, (twenty-five to thirty-one, inclusive,) are given to illustrate some of the morbid appearances observable after death when dropsical effusion has been connected with disease of the liver. The morbid states of the liver found in these cases, were a morbid deposit around or in the secreting portion of that organ, which, without interfering very much with its natural consistence, rendered its surface rough, and its whole texture deranged and granular. A change of structure both in the secreting part and the connecting cellular tissue, so that the whole viscus was brought to an unusual state of firmness—the assini enlarged, and the parenchymatous substance thickened, and brought to a state of semi-cartilaginous hardness: when this state advances further, the cellular tissue forms bands in various directions, not unlike a scirrhous degeneration, either in appearance or consistence. In one case in which this state of the liver existed in a much earlier stage, a total change had taken place in its glandular appearance, so that when cut into, it bore more the appearance of a muscular body cut transversely to the direction of its fibres. In one case there were none of those cartilaginous bands of hardened cellular tissue, but the whole organ was changed into globular concretions, harder and more tough than in the natural condition, easily picked out of the cavities in which they seemed imbedded, and sliding pretty readily over each other, so as to render the whole pliable, though tough. Two plates, containing six figures, are devoted to representations of the morbid conditions of the liver above described. These alterations from a healthy state Dr. B. thinks, "produce very general obstruction to the circulation through the branches of the vena portæ, and become in this way the immediate cause of dropsical effusion, independently of any morbid condition which may result to the blood, by its not giving off those substances from which it is purified, while the process of secreting bile is carried to its full extent."

Cases thirty-six to thirty-nine inclusive, illustrate some of the appearances observable where disease connected with the viscera of the thorax has been followed by dropsical effusion. The morbid appearances observed in the cases in the thorax, were disease of the semilunar valves, obstruction of the aorta by a bony mass, ossification of the mitral valve, consolidation of the lung, adhesion of the pericardium to the heart, and disease of the internal membrane of the heart, &c.

Cases forty to fifty, inclusive, illustrate some of the varieties which take place in the results of inflammation attacking different textures of the lungs. Five of these are cases of inflammation of the mucous membrane of the lungs, (bronchitis;) and eight of inflammation of the substance of the lung, two terminating in suppuration, and the remainder in gangrene.

Two plates representing diseased lung are given, one exhibiting gangrene of that organ, the other abscess.

Cases fifty-three to sixty-seven, are illustrative of some of the morbid appearances discovered in phthisis pulmonalis. These are chiefly disorganization of the lungs, ulceration of the larynx, obstruction of the absorbent glands, more particularly those of the bronchial passages, and of the mesentery, and irritation or ulceration of the mucous membrane of the intestines. Four plates are appropriated to representations of these morbid derangements, two contain delineations of the morbid states of the lungs, and the other two, of morbid derangements found in the intestines.

Two cases, sixty-eight and sixty-nine, are given to show the influence of ipecacuanha, and the milder preparations of mercury in dysentery, one of these cases we have transfered to our periscope.

The next nine cases, (cases seventy to seventy-nine inclusive,) are offered to illustrate the morbid appearances which occasionally take place in the intestines during the progress of fever; and the succeeding eleven cases, which conclude the volume, are illustrative of the treatment to be employed when the mucous membrane of the intestines, is diseased, in fever.

Whatever may be the primary nature of the febrile attack, Dr. B. thinks, there can be no doubt, that early in the disease, "the intestinal canal is irritated, and that this irritation keeps up all the bad symptoms, becomes the chief object to which the practitioner should turn his attention, and is not unfrequently at last the immediate cause of death."

When patients are admitted into the hospital, which is seldom within the first week after the attack, Dr. B. says that the stomach and intestinal canal have become greatly deranged, tenderness is experienced at the pit of the stomach, and there are discharged daily five or six watery dejections, which present an appearance similar to that which would be produced by throwing a powdery matter, of the colour of ochre, into turbid water, and the powder settled to the bottom.

To correct these discharges, which depend on an inflammatory state of the bowels, he has found the combination of the hydrargyrum cum creta, the ipecacuanha, and the compound chalk power in different proportions the most applicable remedy, and in many cases he scarcely used any other combination throughout the disease. Under this simple treatment, with the mildest nourishment, the stools gradually change their character, the febrile symptoms re-

gularly retire; and a state of complete convalescence succeeds to the most threatening symptoms.

When the tenderness of the abdomen is considerable, leeches, or, if the sensibility of the part does not absolutely prohibit the use of cupping-glasses, the abstraction of ten or twelve ounces of blood, in that way, sometimes affords remarkable relief, more particularly if succeeded by the application of fomentations. "The most alarming symptom," says Dr. B. "is the irritable state of the stomach accompanied by frequent vomiting, when a quantity of green fluid is usually thrown up either spontaneously or whenever the attempt is made to administer nourishment or medicine. In this case it becomes absolutely necessary to allay the irritation of the stomach; as not only are we prevented from administering the necessary remedies and support, but the patient is completely worn out by the continuance of the painful and exhausting efforts. The task which we are here called upon to perform is often of the greatest difficulty: leeches and cupping at the pit of the stomach sometimes gives very marked relief, even when the powers of the system appear much diminished; and sometimes a mustard poultice has proved beneficial, or a blister after the leeches have ceased to bleed. We may likewise have recourse to draughts, with the subcarbonate of magnesia and a few drops of the vinum opii, or a simple effervescing saline draught. Opium in the solid form, with or without calomel, occasionally assists much in allaying the sickness; but often, when every thing has failed, soda water with a small quantity, not exceeding a tea-spoonful, of brandy, repeated at long intervals, has remained on the stomach, and enabled it to receive and retain other things after various means have failed."

The symptoms of cerebral affection are to be relieved by cold applications, if there be no great deficiency in the general heat of the body, the hair being first removed, and by leeches or cupping where the symptoms are more urgent.

From examining those who have died at the hospital, Dr. B. does not hesitate to say "that the mucous membrane lining the ilium, the cæcum, and the commencement of the colon, has been the chief source of that excessive irritation which has been so prominent with regard to the bowels, and that the upper part of the duodenum has probably been the source of the urgent gastric symptoms; and occasionally the whole mucous membrane of the small intestines has been vascular and irritated. How far all this mischief may be referred to a morbid action of the liver, as affording a vitiated, a redundant, or an insufficient supply of bile, I will not take upon me to say: but the liver has not presented any marked evidence of irritation: it has occasionally been rather pallid, and the bile in the gall-bladder more thin and watery than in perfect health; but where this has been observed, it has fairly been a matter of doubt whether we ought to consider it the result or the cause of the intestinal irritation."

In fevers accompanied by inflammation of the mucous membrane of the intestine, the bowels are occasionally relaxed from the beginning, but more frequently the contrary is the case, and then Dr. B. considers it to be of the highest importance to remove any accumulations which have taken place, and prevent them in future, and for this purpose he recommends calomel, followed by castor oil, or combined with rhubarb, and their repetition directed according to the nature and extent of the evacuations.

"As long," says he, "as the dejections are feculent and not too watery, and as long as they pass without pain, we shall never be doing harm by our purgatives. On the contrary, the moment that any thing like watery diarrhœa comes on, either after purging has produced irritation, or when, from want of proper purging, the contents of the bowels have given rise to it, we must always bear in mind that the mucous membrane is getting into the state referred to in the preceding observations, after which every thing like brisk or irritating purging must be avoided. The moment the yellow ochry diarrhœa has taken place, I think there can be little doubt that the intestines are either actually ulcerated or are on the very point of ulceration; and then in general the irritation of the canal is of itself sufficient to prevent accumulations; and it must be our great and constant object to improve the secretion of the intestines and the connected viscera rather than to purge actively. We must not, however, for a moment entertain a project of putting a stop to the diarrhœa: we must watch it carefully and constantly; and if we have any reason to doubt the sufficiency of the discharge, we must act gently by means of castor oil guarded by a few drops of laudanum, or by simple emollient glysters. But in general this, which I conceive to be the period when ulceration is commencing, is the time, when the combination of the mildest mercurials, the hydrargyrum cum creta, and the compound chalk powder, with or without ipecacuanha, is administered with the greatest benefit; and it is advantageously continued till the cure is complete. In the following cases it will be found that I have often trusted the progress of the fever so much to the regulation of the bowels by these simple means, that I have appeared to forget the primary disease in my attention to this particular train of symptoms; and in truth I have almost done so, because I have very frequently found the cure of the disease keep exact pace with the improvement taking place in the alimentary canal. This combination generally of itself acts as a purgative; and if it does not, a simple gruel injection seldom fails to produce sufficient effect. During the whole period, however, that our attention is turned to the secretion of the mucous membrane, we are not to forget the possibility of vascular fulness, or even of inflammation being set up in some part of the abdomen, and to overcome this, when we have decided reason to believe in its existence, we are to employ external fomentations, leeches, and even cupping: but these remedies, admirably suited as they often are to this form of disease, must be used with caution; for I am persuaded that I have seen mischief result from an inclination to believe that every painful affection of the abdomen, more particularly if increased by pressure, in the advanced stages of fever, must necessarily be inflammation, and call for abstraction of blood."

Dr. B. has found antimonials do harm where there was any decided tendency to irritation in the bowels, and he usually substitutes the ipecacuanha wine, as a diaphoretic; but he thinks that "in many cases, harm rather than good is done by the use of saline remedies and diaphoretics in any form, as they irritate the bowels without materially aiding in that more equable distribution of the blood which is the professed object of their employment."

Tonic remedies Dr. B. considers as of essential importance; and that even while evidence exists of much local mischief in the bowels, it will sometimes be necessary both to support and to stimulate the system: "looking indeed," says Dr. B. "to the character of the ulcerations, the deep sloughs which they

often form, and the dark red inflammation which surrounds them, there would be reason to suppose that such remedies might be useful. And occasionally the decided remittent form which the fever has assumed, has completely removed every scruple, and led to the free exhibition of the sulphate of quinine with admirable effect. At the same time there is more danger to be feared from the too early use of stimulants, as long as the system is still able, without their aid, to support the febrile prostration, than there is risk in abstaining from stimulants a little beyond the period when they might possibly begin to act well. In a general way the system seems capable of supporting itself for a few days under that great degree of prostration which is connected with advanced ulceration of the bowels; and although we cannot determine the exact state of the ulcers in these cases, yet we find that the action of stimulant and tonic remedies is often more certainly beneficial after that state of prostration has existed for some time, than when such remedies are administered with a view of obviating or anticipating the first symptoms of collapse; for when administered too soon, they frequently kindle the inflammatory action with redoubled violence, and then it is that the most appalling combination of debility and nervous excitement is seen for one or two days to precede death."

Dr. B. concludes his observations on fever, with the remark that though it is perhaps not within the power of human skill always to arrest those awful scenes with which fever frequently terminates, *there is undoubtedly no more certain way of interposing to prevent them than by making ourselves acquainted with the nature of the mischief with which we have to contend.*

Three plates are given of the morbid derangements observed in the intestines in fevers.

As Dr. Bright's volume is so costly as to prevent its circulation in this country, and as its contents are highly interesting, we have been induced to extend our notice beyond the usual limits, and have placed in our periscope some of the most interesting cases.

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2. *Anatomisch Chirurgische Abbildungen nebst Beschreibung der Chirurgischen Operationen, nach der Methoden von* Rust, Græfe *und* Kluge. Von Ludwig Joseph Von Bierkowski, &c. &c. Berlin, 1826. 1 vol. 8vo. pp. 576. (Second vol. not yet published.) With forty Lithographic plates in folio.

Bierkoffski's anatomico-chirurgical illustrations and descriptions of surgical operations, according to the methods of Rust, Græfe, and Kluge, three highly distinguished German professors, is a valuable and beautiful work, the whole of which we hope is by this time published. The plates are of the size of life, and the relative positions of the parts to be operated on, as well as the figure and extent of each external incision, is marked in such a manner as to afford the most satisfactory memoranda to the student or practitioner. Although this work is principally intended to describe the operations of the professors above-named, yet it is not exclusively confined to stating their methods, as those of Lisfranc, Cooper, Beer, Gauttani, &c. are occasionally given. Each operation is described according to the different stages or "acts" to be observed by the surgeon. The general style of this volume is clear, concise, and explicit, characters peculiarly distinctive of modern German didactic works.

Three editions of it have been printed. The first, and best, is printed on the finest Swiss vellum paper, with the muscles and vessels neatly illuminated; the muscles flesh-coloured; the arteries of a vermilion tint; and the veins blue. The second edition is printed upon fine cap paper, having only the vessels coloured, as in the first edition; while the third is printed upon ordinary, (though not course,) paper, and the plates are not coloured. The price is not stated.

In a mere notice like the present, we cannot attempt to offer a satisfactory statement of all the peculiarities of Rust, Græfe, and Kluge's modes of operating. But the following observations of Dr. Bierkoffski, made in a note to the description of Cooper's operation upon the aorta, may prove interesting, and we translate them especially on account of his experiments.

"The course of the blood to the inferior extremities, (when the aorta is tied,) is readily understood, if we recollect the anastomoses between the internal mammary and epigastric, the lower lumbar and circumflexa ilii, and the hemorrhoidal and pelvic arteries. These small vessels, indeed, bear no proportion to the inch-wide aorta,* and consequently when the latter is tied up, the inferior extremities are very sparingly supplied with blood, and therefore are debilitated; the pulsation moreover cannot be discovered while the force of the pulse is expended upon the channels afforded by the innumerable delicate anastomoses through which the circulation is then kept up. As time alone gradually restores the strength of the pulse, the limb will at length be gradually nourished to a due degree and recover its former strength. The small vessels before mentioned can, in time, become somewhat enlarged, but much time is requisite that the vessels above the ligature should gradually form a set of spirally arranged new vessels around about the aorta, and unite with the proper trunk below the ligature. Having, however, had no opportunity of observing this condition, we shall not hazard an opinion. We can say but little upon the subject, as we have but one instance in which the operation has been performed on a human being, and Cooper's patient died within forty hours after the ligature was applied: (might there not have been some complication in this case?) If conclusions drawn from inferior animals were applicable to man, we might say that when there is no other resource, the ligature may be advantageously applied to the aorta.

"With a view to satisfy ourselves of the restoration of the circulation to the inferior extremities, by the formation of new vessels, the following experiments were made.

"On the 20th of January, a ligature was tied around the descending aorta, (of a cat of two years old,) at its posterior extremity. The animal was very restless during the operation, three loops of intestine protruded through the single wound, which was along the linea alba an inch and a half in length, and it was very difficult to apply the ligature properly. The protruded intestine was replaced, the ligature confined at the posterior angle of the wound, and the wound was closed by the bloody suture.

"On the 21st of January we tied the aorta of another cat of two years and a half old, with more care and precaution, at the same point as in the preceding. This cat was so secured that during the operation she could make no move-

* "Diese kleine Gefaess stehen zwar in keinem Verhaeltniss zu der fingerdickenen aorta."

ment, and to prevent with certainty the surrounding of any portion of intestine by the ligature, we used an instrument made of wire, in order to pass it without obstruction. With the aid of this instrument the ligature was very easily applied, and we were very careful to observe that no intestine was included, and to allow none of the bowels to protrude through the wound. The wound was drawn together with stitches.

"The cat which was first operated on, after the application of the ligature, walked with difficulty; in the evening she lapped a little milk. On the succeeding day, January 21st, she appeared very weak, lay constantly extended upon her belly, and slept with her head upon her fore-feet. When roused, she stood up, but could not walk more than a few steps, mewed several times, looked dejected, resumed her former position and again slept. Some milk was offered, which she merely tasted, and refused to take more. She died on the 25th January, about midnight.

"On dissection it was found that a considerable loop of intestine was included with the aorta in the ligature. Nearly all the bowels were inflamed, in part gangrened, and the aorta was somewhat so. The ligature still remained moderately tight. It is evident, the tying in of the bowel was the immediate cause of death.

"The cat operated on the 21st Jan. moved shortly after the operation, licked the wound frequently, slept very well, and woke suddenly, occasionally mewing; at midnight she took some milk, licked the wound, and slept again. Early on the 22d Jan. we found her sitting on a chair in the room; she seemed very tame, and mewed as if hungry, leapt from the chair, and ate some meat. On the 24th the wound was healed with the exception of the part whence the ligature of the aorta depended. On the 26th this ligature came away; on the 28th the wound was entirely healed, and the animal was as well as ever she had been."

It has always appeared to us, that Sir A. Cooper's operation was deferred until too late a period; and we cannot help believing that it was rendered still less likely to succeed by the manner in which it was performed, working his way through the folds of the peritoneum with the finger nails, and then leaving a catgut ligature of considerable size extending from the aorta to the external wound. This must have added greatly to the irritation, as the peristaltic motion of the bowels must have produced no slight friction against the cord.

J. D. G.

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3. *Histoire Anatomique des Inflammations.* Par A. N. Gendrin, M. D. Secrétaire-Général du Cercle Médical de Paris, &c. &c. Paris, 1826. 2 vols. 8vo. pp. 1364.

After two thousand years of wanderings in the wilderness of hypotheses and conjectures, medicine has at last attained the road leading out of the labyrinth in which it has so long been entangled. The imperishable honour of being the first to explore this path, is due to Bichat. It is true that its direction was indicated by Bordeu and Pinel, but it was Bichat who first advanced any distance, and who proved it to be the road by which medicine was to arrive at its highest possible state of perfection. His discoveries mark an era as important

in medicine, as do those of Lavoisier in chemistry, or Newton, in natural philosophy.

Formerly, anatomy taught the position, size, and configuration of the organs; a knowledge no doubt useful, particularly to the surgeon, but of little service to the physician in his investigations into the nature of diseases, and the best means of cure: physiology was a distinct science, and pathology could scarcely be said to exist. Bichat, by means of the scalpel, and where that failed him, with the aid of chemical reagents, ascertained the elementary parts or textures of which the body was composed, pointed out their properties, combinations, and appearances in health, and showed that each tissue, in the structure of whatever organ it might occur, presented in disease identical phenomena. He thus created a new anatomy, a new physiology, and a new pathology, one founded on the other; a physiology based on anatomy, a pathology erected on physiology, each forming stories of the same edifice, and together forming a durable and splendid superstructure. Unfortunately for science, Bichat's career was cut short by an early death, but the brilliant discoveries at which he arrived by his mode of investigation, have induced many disciples to follow zealously the same path, and medicine is daily advancing by their labours to a state of perfection equal to that of the other sciences.

Among the followers of this great master, Dr. Gendrin will, we think, stand conspicuous. Bichat ascertained and described most of the healthy and some of the pathological characters of these tissues, but he left by far the greater portion of the extensive and rich field of pathology to the exploration of others.

Dr. Gendrin has engaged in this investigation, and in the work the title of which stands at the head of this article, he has endeavoured to present us with as full and accurate an account of the changes produced in the tissues by disease, as Bichat has of the tissues in a healthy condition. His work is divided into three books. The first book consists of thirteen chapters, the first twelve of which are devoted to a brief description of the characters of each of the tissues in health, followed by a full account of the effects produced in each by the different forms of inflammation to which they are subject, as acute, chronic, phagedenic, and gangrenous; the last chapter comprises the history of adhesive inflammation in each of the tissues, with an account of the anatomical characters of adhesive inflammation in general.

The second book treats of the alterations which follow inflammation, and consists of two parts. The first part is devoted to an account of the alterations produced in the fluids by disease, and is divided into three chapters. In the first, the author describes the blood in its healthy state, and the alterations produced in it by inflammation; in the second, the fluid products of inflamed tissues; and in the last, the alterations in the fluids produced by changes in the organs which secrete them. The second part is devoted to a description of the alterations of texture which follow inflammation, and is likewise divided into three chapters. The first relates to immediate adhesion succeeding inflammation; the second to the membranes which form on the parieties of accidental cavities in the substance of the organs, as cysts, and the lining of fistulous canals, the third to the preternatural laminæ and fibrilla which form on the surface of inflamed membranes.

In the third and last book, the author treats of the comparative anatomy of

the alterations of the tissues, both those produced by inflammation, and those which are not, and he divides this book also into three chapters. In the first he describes the idiopathic and inflammatory softenings of the bones, of the mucous and villous, of the nervous and of the muscular tissues: in the second, the comparative anatomy of tuberculous and inflamed tissues: in the third, the comparative anatomy of the scirrhous and carcinomatous and inflamed tissues —and concludes the work with a summary of the anatomical history, including the theory, general principles, and rational treatment of phlegmasias.

It will be perceived from the above sketch; that the plan is full and comprehensive, embracing, indeed, the whole range of pathology, a subject hitherto little investigated, and one, the investigation of which demands persevering and laborious research, talents for observation, and a mind free from prejudice and anxious only to arrive at the truth. M. G. appears to have brought to the task all these requisites, and to have had the advantage of numerous opportunities for observation, which have enabled him to illustrate every part of his work with interesting cases. We should be much pleased to see this work translated into our language; it would be a most valuable accession to the library of the student of medicine.

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4. *Traité de l'auscultation Mediate et des Maladies des Poumons et du Coeur.* Par R. T. H. Laennec, Medécin de S. A. R. Madame Duchesse De Berry, Lecteur, et Professeur Royal de Medecine au college de France, Professeur de Clinique à la Faculté de Medecine de Paris, &c. &c. &c. Seconde Edition entierement refondue. Toms. 2. Paris, 1826, pp. 1518.

A Treatise on the Diseases of the Chest and on Mediate Auscultation. By R. T. H. Laennec, M. D. &c. &c. Second edition, greatly enlarged: translated from the French, with notes and a sketch of the author's life, by John Forbes, M. D. Member of the Royal College of Physicians, and Senior Physician to the Chichester Infirmary. With plates. London 1827, pp. 722.

The profession will be pleased to learn, that a new edition of the classical work of Laennec, has been published, enlarged and corrected from the observations which the author has made during the seven years that have elapsed since the publication of his first edition. During this period, he has assiduously employed himself in collecting new proofs of the correctness of his principles and of the accuracy and precision of his method of examination, and in extending his researches on several subjects, which he had formerly not been able satisfactorily to elucidate. In these investigations he has been eminently successful and has been enabled to render his work complete as a pathological and practical treatise on the diseases of the organs of respiration and circulation.

The additions to the present work are so numerous, and the alterations so considerable, that it ought rather to be considered as a new work than a new edition of the former, though all the contents of the first publication are comprised in this. The arrangement of the present edition is much more natural and physiological than that adopted in the former one. The chapters on pituitous catarrh, on dry catarrh, on dilatation of the bronchia, on emphysema of the lung, on perypneumony and gangrene of the lungs, on pulmonary tubercles, on

diseases of the heart, &c. have been much enlarged; and on several subjects new chapters have been added, as on symptomatic catarrh, suffocative catarrh, croup, bronchial hæmorrhage, hypertrophy and atrophy of the lung, &c.

The translation by Dr. Forbes appears to be faithfully executed, and is enriched with notes by the translator. The original is written in rather a diffuse style; in the translation the cases are considerably abridged, and the rest of the work much condensed. We hope an edition of this work will speedily be published in this country, that American practitioners may possess themselves with a work, which is, without question, the most valuable ever written on the pathology and diagnosis of the diseases of the thorax, and, indeed, may be considered as almost perfect in its kind.

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5. *Grundriss der Chirurgischen operationen, von* D. Gottlob Bernhard Schreger, Kœnigl, Baierschem Hofrathe, &c. &c. Nurnberg, 1826, 2 vol. 8vo. pp. 1000, third edition, revised and enlarged.

This is the most complete and satisfactory view of the elements of operative surgery we have yet seen; and we are not surprised that it should have been several times enlarged and reprinted within a few years. The operations of surgery are not merely described, but the history of the rise and progressive improvement of each operation is given; the instruments used in performing them are referred to their respective inventors and improvers, and the different modes of operating employed by distinguished and experienced surgeons of all countries, are succinctly and perspicuously stated. The various operations are accompanied by ample references to valuable treatises and papers on the subject, so that the reader has always within view a catalogue of the best books to be consulted, when he desires to extend his acquaintance with the operation.

No one can examine German scientific works, without being pleased to observe the liberality they display towards those devoted to similar pursuits in other countries than their own, as well as the full credit they give to the authors of improvements, however obscure the individual may be. Such conduct is highly commendable, and the imitation of it may be urged upon the cultivators of medicine generally. Dr. Schreger's work is worthy of being well translated, and unless we are much mistaken, it would be considered an acceptable addition to the libraries of American surgeons. J. D. G.

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6. *Manuale Clinico di Obstretricia di* Francesco Asdrubali, Tomi 2e 8vo. Roma, 1826, pp. 835.

The author of the above cited work on the obstetric art, is one of the most celebrated and erudite practitioners in Italy, he is at present professor of midwifery in the college of Sapienza, and has already published much on this branch of medicine. His first work, which appeared in 1795, was the Elements of Obstetrics: this treatise was received with great eagerness by the profession throughout Italy. This was succeeded in 1812 by a very voluminous work on the theory and practice of midwifery, and afterwards by the present, which appears to be an abridgment of the practical portion of the larger work.

As in most treatises on medicine, published on the continent, and particularly in Italy, there is a great portion of it occupied with references to the earliest known authorities, which, although useful in a history of the science, seldom are of a sufficiently practical nature to be relied on in the present advanced state of the healing art. Dr. Asdrubali appears perfectly acquainted with the writings of cotemporary authors, and refers constantly to them, particularly to those of M. de Lachapelle and Baudelocque, his work also contains some excellent observations on the different points of legal medicine connected with obstetrics. As this is one of the latest works on midwifery which has issued from the Italian schools, we will give a short analysis of its contents, judging that our readers would feel anxious to learn what progress this important branch has made in that country.

The author begins by treating of parturition in general, and of the anatomy of the pelvis, and organs of generation, and like Barclay and Chaupier, wishes to establish a nomenclature in anatomy, similar to that adopted in chemistry, thus he terms the ossa innominata, the bi-ileo, ischio-peltinee, ventaglio-forme. He is a strenuous supporter of the general existence of the hymen, although he very properly admits that its absence is not a proof of the loss of virginity; in treating of the last subject he divides it into perfect, mixed and imperfect.

Dr. Asdrubali's division of pregnancies differs somewhat from those adopted in this country, he terms them:—1. Fortunate pregnancies when the womb contains a living fœtus. 2. Unfortunate when it is extra-uterine, or when the fœtus is dead. 3. False when there is a mole or hydatids. 4. Mixed when there is a living fœtus accompanied by a mole, &c.

After describing the natural positions of the head of the fœtus during labour, he discusses at some length, the posture that the woman is to maintain during delivery; and finally decides, that the best is a sofa, on which a hard mattrass is placed, which should be inclined towards the feet of the patient; he recommends that an accoucheur should if possible always have three assistants.

Our author's observations on the treatment of the placenta, are founded on just principles, and deserve attention. He details many cases in which irreparable injury has ensued from the haste and violence of the accoucheur in bringing away the after-birth.

The next chapters are devoted to natural and preternatural, (*morbose,*) labours, these, from the cursory glance we have made of them, appear to contain little that is new and interesting; he then proceeds to the consideration of instruments, and recommends strongly the use of the lever, not the instrument generally known in this country under that name, but a blunt instrument to support or change the position of different parts of the body of the child; he also makes much use of the fillet.

In the succeeding chapters are noticed the Cæsarian operation and division of the symphysis pubis, of which, he prefers the former; observing, that viewed in every light, the latter is much more dangerous, and far from being as certain as the Cæsarian section.

The last chapters are devoted to the consideration of the accidents that take place during labour, as laceration of the womb, or perineum, uterine hæmorrhage, &c.

R. E. G.

7. *Sulla Ottalmia Pustolar-Contagiosa.* Del Chirurgo Gaetano Buzzi. Prato, 1825. 8vo. pp. 100,

The study of ophthalmology has of late years attracted much attention from the medical profession, and consequently has advanced rapidly in certainty and usefulness. That this is attributable to our increased knowledge of the different tissues cannot be denied, and must be evident to the most cursory observer. Pathology, once a complete chaos of unconnected facts, is now becoming a science beautiful in its connexions, and certain in its results.

We have long been indebted to Italy for useful information on diseases of the eye, the labours of Scarpa alone would have entitled her to claim a high rank among the benefactors of mankind, he gave an impulse to the successful investigation of the structure and diseases of the eye, which has been unremittingly followed by his contrymen, among whom may be mentioned Assalini, Vasani, and the author of the treatise under consideration.

This work has been published two years, but we believe has never been noticed in our journals—the author gives his practical knowledge and the fruits of his experience in a simple and brief form, without loading his work with the speculations of others further than is incidentally required, and displays a perspicuity of observation that will make his few pages valuable to the medical world.

It contains a detail of many experiments instituted by him to ascertain the fact of the contagious nature, and the best means of cure for this dangerous form of ophthalmia. This subject is of such practical importance, and has so often been the topic of violent disputes, that we have thought it would be interesting to our readers to give a short analysis of the work.

After observing that every author who has written on the disease has given it a new appellation, he falls into the same error, and proposes that of pustular contagious ophthalmia, thus adding to the confusion already existing, from writers describing the various forms of the disease under different names.

His reasons are as follows:—"Having observed that this form of ophthalmia is always contagious, and that from its very commencement, or rather from the moment it is perceptible, there are always to be discerned on the conjunctiva covering the globe of the eye, pustules, abrasions or ulcers, I determined to bestow on it a name which would at once define it and give its principal characteristics."

Dr. Buzzi denies positively that the first appearance of this disease in Europe was immediately succeeding the arrival of the troops from Egypt in 1798, and says that "the contagious pustular ophthalmia is peculiar to all countries, and exists at all times, that it is certainly more common in Egypt, as its predisposing causes are more frequent and permanent in their action in that country." He has seen it arise in Florence in an individual who communicated it to his whole family, and what is worthy of observation, that the first attacked were the youngest children from whom it was successive in its progress to the adults. He says that it occurs most frequently in children of scrofulous habits, and as this latter disease is so prevalent in Florence, it accounts for the number of blind, who are to be seen in that city.

Dr. B. considers that improper and scanty food, impure air, uncleanliness,

&c. are all predisposing causes of ophthalmia, and that some individuals are much more susceptible of its attacks than others; he details an extraordinary case of the supposed contagion of this disease from Vasani. "In 1817, a hospital was established in Ancona for the reception of ophthalmic patients, the poultices, &c. used by the patients were thrown from a window and fed on by fowls, and strange to relate, these birds were all attacked with purulent ophthalmia in so violent a degree as to become blind"—the author afterwards details some experiments he made, which certainly tend to show that the purulent matter from a diseased eye is capable of exciting inflammation, and a purulent discharge when applied to a sound eye; he thinks these are conclusive as to the fact of its contagious nature, we have no doubt of the fact that the purulent matter from a diseased and ulcerated eye is capable of inducing a similar state of things when applied to a sound eye, but we are also of opinion that any acrimonious discharge from a mucous membrane when applied to the eye would induce a purulent ophthalmia, it is owing to the overlooking of this circumstance that the science has been loaded with so many divisions of purulent ophthalmia, as Egyptian ophthalmia, gonorrhœa, &c.

We shall not follow our author in his description of the disease, and the progress of the symptoms; as these, although faithfully and accurately given, are familiar to every one; but proceed to his mode of cure; this he details at some length, but the whole may be given in a few words. To diminish the inflammation by local depletion and topical applications, to keep the eye clean and as free as possible from an accumulation of the purulent discharge, to create a counter-irritation by means of blisters behind the ears, to pay strict attention to the state of the alimentary canal, and to maintain a strict diet. In the chronic state, and when ulcers exist, he advises the use of a solution of corrosive sublimate, 1 gr. to ℥v. of water, he has also found benefit in these cases from a wash of lime water, in which two grains of sal. ammoniac have been added to each ounce.

R. E. G.

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8. *An Inquiry into the Nature and Treatment of Diabetes, Calculus and other Affections of the Urinary Organs: with Remarks on the Importance of attending to the State of the Urine in Organic Diseases of the Kidney and Bladder; and some Practical Rules for determining the Nature of the Disease from the Sensible and Chemical Properties of that Secretion.* By William Prout, M. D., F. R. S. From the second London edition, revised and much enlarged: with notes and additions by S. Calhoun, M. D. &c. Philadelphia, 1 vol. 8vo. pp. 308.

When we take into consideration the obscure pathology, painful nature, and great intractability of diseases of the urinary system, we are glad to see a second edition of Mr. Prout's valuable treatise upon the subject, with proofs that it still receives his able investigation. In its present form we believe the work embraces more interesting and authentic information relative to these affections than any other we know of, as, in addition to the store furnished by the author, the American editor has added to the volume nearly all the valuable matter upon the subject, to be found dispersed through the writings of others.

That those who have never examined the work, may have some idea of the contents, we shall condense a few remarks from it of a general nature.

Mr. Prout has indicated with great skill and precision, the constituent parts of the blood and urine. When a comparison is instituted between the comparatively simple composition of the former, and the heterogeneous character of the product derived from it, we cannot fail to be struck with surprise at the wonderful powers of elaboration possessed by the kidneys. As Berzelius has previously remarked, *acidification* seems to constitute the chief feature in these operations. Thus, for example, in the healthy process, the sulphur and phosphorus of the blood are converted by the kidneys into sulphuric and phosphoric acids; a new acid, the lithic, is generated, etc: but in certain morbid conditions, this acidifying tendency is carried to excess, giving occasion to the production of the nitric acid, oxalic acid, &c. At other times, however, it is diminished or suspended, and unchanged blood, or albuminous matter; neutral substances, as urea or sugar; or even alkaline substances, as ammonia, lime, and magnesia, are separated in abundance; the phosphorus and sulphur naturally belonging to the blood, passing at the same time through the kidneys and bladder without being acidified.

"It may be remarked in general," says Mr. Prout, "that when acids are formed in excess by the kidneys, the urine is commonly small in quantity and high-coloured, and the disease inflammatory. When neutral or alkaline substances, the urine on the contrary is generally pale-coloured and large in quantity, and the diseases are those of irritation and debility."

The author of the treatise has divided diseases of the urinary organs into three general classes. 1st. *Functional* diseases; comprehending all those affections arising from a deranged operation of the kidneys. 2d. *Mechanical* diseases; including all those arising from the mechanical irritation of solid foreign bodies, as calculi, &c. 3d. *Organic* diseases; or those connected with disorganization of some portion of the urinary organs. These general divisions are subdivided into other heads, so as to embrace each disease common to the urinary system. The closeness with which the author and editor have adhered to practical points is certainly very praiseworthy, and the chemical details of the former, which constitute the basis of most of his inquiries, are exceedingly plain, concise, and intelligible. G. E.

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9. *Encephali Anatomica Descriptio a Doctore* Lupi, *filio, peracta. Romæ*, 1826, pp. 69.

This unpretending pamphlet contains an accurate view of the improvements made in the investigation of the anatomy of the encephalon, by Gall, Spurzheim, Meckel, Cloquet, Chausier, &c. and was published by Dr. Lupi, the younger, for the use of students, whose books generally contained the anatomy of the encephalon according to the ancient "cheese-slicing" method. If we feel any regret in relation to this description of the brain, it is, that the author did not give it in his own beautiful language; for whether it be owing to the nature of the subject, or to the difficulty of arranging technicalities in the language of ancient Rome, or to any other cause, the Latin of this description sounds peculiarly flat in general, and is in many instances rugged and unpleasant. It is, nevertheless, throughout correct and clearly comprehensible; merits which, on such a subject, might fully compensate for greater defects than mere mediocrity or slight inelegance of style. J. D. G.

10. *Replica di* L. Metaxa *all'apologia di alcune postille Scritte da* D. Meli. Roma, 1826, pp. 75.

The melancholy truth that neither learning, talent, nor station always exempt individuals from human frailties and passions, is clearly confirmed by the pamphlet before us: it moreover indicates that the "*genus irritabile*," comprises a greater number of *species* than is commonly referred thereto. The cause of complaint against Signor Meli is that of having published a criticism upon a medico-legal dissertation, written by Professor Flajani, in which, on the supposition of its having been written by Dr. Metaxà, Meli abuses the latter scurrilously and personally.

We have, heretofore, had occasion to pay due homage to the professional learning and intellectual acumen of Professor Metaxà, in his paper on the case of Crespi, who was tried on the charge of having committed a rape upon the person of an immature female.* We have also recently received his *second* memorial on the same subject, in which his claims as an investigator of medico-legal evidence are shown to be of the highest order. With his especial quarrel we have nothing to do, and very little to say, except, that judging by the coarse and scurrile epithets which he quotes as used against him, he has stooped to notice an aggressor altogether unworthy of his attention.

But we may be allowed to call the attention of the profession to the subject of this sort of warfare in general; and to invite those who are desirous of seeing the dignity of the medical character augmented and sustained, to unite in discountenancing similar exhibitions of ignobleness, passion, or egotism. It is no doubt true, according to the words of Sallust, adopted by the author of the pamphlet, "nulli mortalium injuriæ suæ *parvæ* videntur," but it is not less true, that few, very few, instances can occur, in which injuries sustained in the business of life by an individual will prove sufficiently *great* to interest the feelings of a whole community. The frequent references to the public to determine whether A has not greatly injured B, or C has not exceedingly misrepresented D, &c. may appear of great importance to the querists themselves, but can have little other influence upon the public besides that of causing the *profession* to be regarded as peculiarly addicted to malevolence and strife, and thence, to diminish the respect entertained towards the whole body.

It is certainly a severe trial to have abuse and misrepresentation published against one, and occasionally from men who are, "ex officio," supposed to be respectable, and not to reply; more especially where we feel confident that we could readily prove that the aggressor is as incompetent to judge, as he is violent and abusive. Nevertheless, the most usual causes of altercation, and reference to the public, are of a nature to call for forbearance and self-respect, rather than an appeal to that "public" which cannot or will not take time to inquire into the true state of the case. Upon your true literary Aspic, the severest infliction is the contempt of entire neglect; no greater suffering can such creatures experience, than that which follows from perceiving that their most

* Philadelphia Med. and Phys. Journal, vol. ix. p. 427.

concentrated venom is so innoxious, as not even to provoke the motion of a finger for their removal.

As long as men are differently educated and variously endowed by nature and fortune, we must expect differences of opinion and discrepancies of judgment, even from an examination of the same data. These differences, so long as those who exhibit them are influenced by correct and honourable principles, tend to produce inquiry and promote improvement. But the altercations which spring from disingenuous artifice, and are hurried before the public by passionate egotism, are always injurious to the profession. Just, however, is the decision of the public, in almost every instance, that both sides are in the wrong: yet the justice awarded the individuals rarely fails to cause a part of the *odium* to be imputed to the *profession*.

As a remedy for such evils, we would beg leave to propose a greater scientific and social intercourse among the members of our profession, with a view of eliciting truth by courteous interchange of sentiment, and by mutual exertions in the cause of science, to inspire a feeling of noble emulation. Where individuals exhibit that unhappiness of temper which renders them almost universally obnoxious and disagreeable—let them be politely shunned—"put into Coventry"—left to their own society, until they learn to appreciate the privilege of associating with those, who, in the pursuit of fame and fortune, never for an instant forget the rights and feelings of cotemporary aspirants. J. D. G.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

ANATOMY.

1. *Structure of the Nerves.*—"With the view of ascertaining whether these organs are canals or not, M. Amussat has attempted to inject them; and laid before the *Académie de Médecine*, at a recent meeting, an anatomical preparation, from which it appeared, that when the nerves are injected with mercury, from the branches towards their origin, the fluid, instead of reaching the substance of the spinal marrow, falls into the cavity of the dura mater; that when a common trunk, or a nerve, near its origin in the spinal marrow, is injected, the mercurial tube being directed along the side of the organs, the mercury does not penetrate the neurilema, so that these two injections, thrown in opposite directions, with regard to the same nerve, prove that there are two investing membranes or neurilemata; and that when nerves are injected, the fluid passes between them—when a bundle of nerves is injected from an origin above their ganglia, on directing the tube towards the spinal marrow, the mercury frequently penetrates a blood-vessel of the fasciculus, which proves beyond a doubt that it is not the nerve itself that is injected in this manner, but an artery."—*Révue Méd. Juin*, 1827.

2. *Spurious Hermaphrodism.*—The following "conformation of the organs of generation, was observed in a male subject who died at the age of sixty-seven. The labia were closely imitated by two longitudinal folds of the skin, at the upper part of which was an imperforato penis, which might have passed for the clitoris. The opening of the urethra was beneath, and at the root of this appendage—below which again was a round opening, terminating in a *cul de sac*, giving something like the aspect of a vagina. There was even a membranous fold across this, perforated in the centre, which might have passed for the hymen. The labia resembled those of an old woman; but there were no substitutes for the nymphæ. The testicles were above the inguinal ring. The possessor of these peculiarities had always passed for a man. The breasts were not developed; he was rather inclined to be lusty; had a scanty beard; was feeble both in body and mind; never manifested any sexual propensities; and, in fact, was considered impotent."—*Journal des Progrès, vol. iii.*

3. *Case of Monstrosity*, by J. Tucker, Esq.—" The fœtus appeared to be full grown; and there being a division throughout the chest and abdomen, the whole contents of both cavities were exposed to view. The display of the thoracic viscera arose from a separation through the median line of the sternum, which extended to the pubes; the edges of the recti muscles were reverted as it were, and faced with a white, tendinous border. But the deviations did not

end here. The right hand exhibited but one finger, and the left foot but one toe. The umbilical chord made its exit on the back, between the scapulæ.

"Immediately on delivery, the child cried lustily, and lived for two hours, during the greater part of which I had the heart in my hand, and witnessed the vena cava returning the blood to its right side, and its reception on the left from the pulmonary vein. The aorta and pulmonary artery were also both distinctly seen, together with their actions.

"As all the abdominal viscera were out of the cavity, by simply turning them aside I could see the descending aorta and the ascending cava."—*Lond. Med. Repos. and Rev. Nov.* 1827.

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4. *Structure and Derangements of the Lymphatic System.*—"M. Amussat has presented to the Académie Royale some anatomical preparations, exhibiting an injection of the abdominal lymphatics, and a demonstration of the fact, advanced by certain Italian physiologists, that there is a communication between these vessels and the veins: this communication is established between the lymphatic glands and the large trunks, through the medium of certain canals. In these preparations the mercury passed direct from the lymphatics into the cava and the common iliacs.

"The same gentleman also exhibited a morbid preparation, taken from the body of a person who had died of small-pox. In this subject, the attempt to inject the lymphatics had been made in vain; and the obstacle was found to consist in the lymphatics of the abdomen, and even the thoracic duct itself, being loaded with blood. This last-mentioned phenomenon appears to have been observed by others; but it is not indicative of an inflammatory state of the vessels themselves; which, after removing the blood, (absorbed by them in all probability,) exhibited their natural physiological state."—*Journal Gén. Mai*, 1827.

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5. *Bilobate Uterus.*—M. Berard, Jr. found on examining an insane patient, aged fifty-six years, who died at the hospital, Salpêtrière, the following formation of the genital organs. "The uterus viewed externally was divided by a deep fissure, extending from its superior border to its neck, into two perfectly distinct lobes, although irregularly puckered and deformed by fibrous bodies projecting from its surface. From the external extremity of the superior border of each of these lobes, originated a fallopian tube surmounted by an ovary, and a round ligament. The internal extremity of the same border scarcely existed, being continued imperceptibly into the fissure. On dividing the lobes to observe their cavity, other fibrous bodies were found in their tissue. The cavity of the lobes in which were suspended other very small fibrous bodies, had sufficient capacity, an almost vertical direction, and formed but a slight angle with that of the neck. This like the body of the uterus was divided into two parts, but by a partition only which was continued the whole extent of the vagina, as far as beneath the meatus urinarius, in such a manner that there were two vaginas corresponding to the two neck of the uterus, entirely separated. Great thickness of the vagina especially near the vulva, the partition was formed by a duplicature of the proper membrane of this passage, which could easily be made to move one on the other. Numerous transverse rugæ furrowed the mucous membrane. Two or three fleshy tubercles, the remains of the hymens, existed at the external orifices, which opened into a single, naturally formed vulva."

This woman had had but one infant, born at the full period, which died during birth, after a difficult labour. The existence of this singular conformation was not suspected during life.—*Journal des Progrès, vol iv.*

PHYSIOLOGY.

6. *On Vital Motion, by* M. H. Dutrochet.—M. Dutrochet has recently published a work on vital motion, in which he details experiments and discoveries, of a most interesting and extraordinary character, calculated to throw a new light upon an important portion of physiology. As Mr. D.'s discoveries are of extreme interest, and as no copy of his work, has we believe, yet reached this country, we extract from an analysis of it in the *Foreign Quarterly Review, No. I.* a notice of some of his most interesting observations. When we receive the book, we shall give further details.

"Having cut off the tail from a small fish, and preserved it alive in a vessel full of water, M. Dutrochet soon afterwards perceived, on the surface of the wound, a species of aquatic mouldiness, consisting of long filaments, each of which was terminated by a small swelling or bulb, perceptible to the naked eye. These filaments were transparent, but the bulbs were opaque, pointed, and resembled the capsules of a plant. He divided some of these filaments transversely, and having placed them, with a little water, in a watch-glass, under the microscope, saw some of the bulbs expel numerous globules through an opening situated at their apex, without any apparent contraction or diminution of their size, the space previously occupied by the globules being filled with water, which seemed 'to perform here the office of the piston of a syringe, for raising and expelling at the point of the capsule, the mass of globules which at first totally filled the capsule.'—p. 106.

"The whole of the globules were soon expelled from each bulb, and owing to a peculiar motion which they displayed at the instant of their expulsion, M. Dutrochet was inclined to believe that they were the animalcula described by Needham and Bory de Saint Vincent; but subsequent observations convinced him that this was not the case, but that they were seeds of the plant, on whom a transitory movement had been impressed by the force of their expulsion. Reflecting on this phenomenon, and believing that the water which was introduced into the part of the capsular cavity opposite to the point of expulsion was the mechanical instrument of the *vis a tergo*, which produced the expulsion of the globules, our author naturally inquired—whence comes this water? and by what power is it carried into the interior of the capsule? To enable him to answer these queries, he repeated his observations upon the bulbs of mould produced on dead animal matter in water, and also upon the little sac which contains the spermatic paste of the snail, and which, when placed in water, expels its contents in the same manner as the bulb of the mould. From these experiments, our author arrived at the conclusion, that these small hollow organs have the faculty 'of introducing with violence, into their cavity and through their sides, the water which bathes their exterior surface; and this in such a manner as to expel from that cavity substances which it previously contained.'—p. 114. M. Dutrochet was, as yet, unable to assign a cause for this *physico-organic* phenomenon, to which he applied the name of *endosmose;** but he ascertained, that it does not occur unless the matter contained in the little cavities be of a greater specific gravity than the water or fluid which surrounds them; and he conceived the possibility of demonstrating this, by obtaining an analogous result on a larger scale, and with a more manageable apparatus. For this purpose, he selected the cæcum, or blind-gut, of a young chicken, into which after cleaning it with pure water, he put 196 grains of milk, a quantity sufficient to fill one half of its cavity only; and then, having tied a ligature firmly round its open extremity, he placed it in water. After twenty-four hours he found that the cæcum had imbibed as much water as increased its weight 73 grains; and at the end of thirty-six hours, 117 grains of water had entered it, and the gut was become very turgid. But from this time the weight of the in-

* From ἔνδον, inward; and ὠσμος, impulse.

testine gradually diminished; and, at the termination of thirty-six hours, it had lost 54 grains of the water which it had previously imbibed, and the milky fluid within it had become putrid. The temperature during the experiment was from 18° to 21° degrees of Reaumur. The repetition of this experiment with various modifications, and with different fluids introduced into the gut, decidedly demonstrated, says M. Dutrochet, 'that the introduction of the water into the organic cavity depends altogether on the contained fluid being denser than that containing the cavity. As long as this fluid remains undecomposed, the endosmose continues; but the instant that it becomes putrid, the endosmose ceases, and the water, instead of entering into the cavity as before, passes out of it, and with as much rapidity as it entered.'—p. 125. He at first attributed the passing out of the water to the ceasing of the endosmose; but he soon ascertained, by reversing his experiments, that it is as much a specific action of the organic membrane as that which causes the introduction of the fluid; and that when the gut was filled with a thinner fluid than that in which it was placed, the fluid passed out of it with as much rapidity as it entered in the opposite experiment. This action M. Dutrochet has named *exosmose*.* He next ascertained that when chemical fluids, even of a less density than water, are employed, *endosmose* takes place when the solution contained in the closed gut is alkaline, and *exosmose* when it is acid.

"As *endosmose* produces an excess of turgidity in any hollow organ endowed with it, and necessarily extends the sides of the cavity so as to cause them to re-act upon the contained fluid, our author conceived the idea that this would be sufficient to cause water to ascend in a tube, the inferior extremity of which should be fixed into a hollow organ in the state of endosmose, an opinion which was confirmed by experiment. Among other experiments, contrived to prove this fact, he fixed the open end of a glass tube, six decimetres in length, and the bore of which was five milimetres in diameter, into the cæcum of a chicken, filled with a solution of gum Arabic; and having plunged the closed gut into rain water, he supported the tube in a vertical position. During twenty hours the fluid was perceived ascending in the tube until it reached the top, out of which it flowed; and this it continued to do until the third day, when it began to sink; and, on the fourth day, the cæcum being opened, the fluid was found to be putrid. Similar results were obtained by employing the swimming bladder of the carp, and even the inflated pod of bladder senna, (colutea *arborescens,*) instead of the cæcum, demonstrating that endosmose was not confined to the organic membrane of animal cavities, but was equally the property of vegetable membrane.

"The mere fact of a thin fluid, separated from a denser by an organic membrane, passing through that membrane towards the denser, would naturally excite in a philosophic mind the idea that this effect might be the result of an electrical action, the contact of bodies of different densities being a well known cause of electricity; our author, therefore, formed the opinion that it is the electrical influence which impels the molecules of the liquid through the organic membrane, both in *endosmose* and *exosmose;* and he was confirmed in this theory by the following experiment of M. Porret. This philosopher having divided a cylindrical jar into two compartments, by means of a bladder, filled one of these compartments with water, and put a few drops only into the other. He then placed the negative pole, (*zinc*, or *the less dense,*) of a galvanic pile into the compartment filled with water, and the negative, (*copper*, or *the denser,*) into that which was nearly empty: the water was forced through the bladder into the empty part of the jar, and continued to flow into it until its surface was much higher than that at which it stood in the part originally full. Imitating this experiment, M. Dutrochet having tied one end of a glass tube into the cæcum of a chicken, into which also he fixed another capillary tube, passed the negative wire of a galvanic pile, through a cork fitted to the first tube, into

* From ἐξ, out; and ωσμος, impulse.

the cæcum, while the positive wire was placed in the water into which the cæcum was put. The cæcum soon became turgid with the water which had passed into it through its sides, and this rose in the capillary tube, and flowed over its open orifice, as in the experiment in which fluids of different densities only were employed. When the wires were reversed, and the cæcum empty, no fluid passed into it, but if the cæcum was previously filled with water, it was quickly emptied. Similar results were obtained when the pod of bladder senna, (colutea *arborescens,*) was used instead of the cæcum, as in the former experiments; but not when inorganic substances were employed: and this is the more remarkable, as the condition of organic membranes, which fits them for *endosmose* and *exosmose*, continues after they have been dried, it being only necessary to soak them in water to renew their power of displaying these faculties. From his experiments with electricity, our author concludes, that all the vesicles, constituting the tissues of animal and of vegetable bodies, operate as minute Leyden phials electrified negatively within, and positively without; and from this continuing to be the case, as long as the integrity of the animal and vegetable textures remains unimpaired, these vesicles continue turgid by endosmose.

"It was important to ascertain the effect of temperature on *endosmose;* and M. Dutrochet, after repeated experiments, ascertained that it is augmented in an increased temperature; a result which corresponds with the fact, that by increasing the temperature of two metals, the contact of which produces electricity, the intensity of the electrical current is increased. Another proof of the electrical nature of endosmose was obtained by nearly filling the cæcum of a chicken with white of egg, closing it and plunging it into water. The cæcum soon became turgid; and, being opened after the lapse of some hours, its inner surface was found to be lined with a coating of coagulated albumen; which we know to be one of the effects produced by currents of voltaic electricity.

"M. Dutrochet observes that the organs of animals, with the exception of the blood-vessels in those that possess a circulation, are composed of congeries of vesicles, a fact which can be readily demonstrated in the mollusca, the fundamental conditions for endosmose an exosmose are found in animals; and that their vascular systems may be regarded as merely the channels for irrigating, as it were, the vesicular parts, and carrying to their elementary vesicles new organic matter, which they deposit by filtration by the aid of endosmose. He illustrates this position by examining the phenomena attending *inflammation.* The inflamed part becomes turgid, owing to the fluids in the neighbouring parts being attracted to it by *adfluxion;* the increased calibre of the arteries is owing to the augmented supply of blood which the adfluxion determines to the inflamed part; whilst the veins are dilated by the more than ordinary impulse of the blood, which this part supplies to them in greater abundance and with a greater force than usual. 'Thus,' says our author, 'the inflamed part is at the same time the termination of affluxion and the origin of impulsion for the blood. We have already seen that such are exactly the effects of endosmose in plants. No doubt, therefore, can remain that inflammation is a phenomenon of endosmose. Now this phenomenon, the effects of which are so visible in the morbid state of the body, exists equally in the natural state, but in a less degree of intensity.'—p. 194.

"An objection here presents itself, that all turgescence cannot be regarded as a morbid *hyperendosmose,* to use the language of our author, as a state of turgescence, for example the erectile, is perfectly compatible with a healthy state of the parts. This objection M. Dutrochet has anticipated, and contends that the two states are essentially different, the erectile depending upon one occasional cause only, whereas the morbid depends upon many; for instance, the introduction of foreign matters into the organic tissue, the alteration of the substances contained in the elementary vesicles, and their greater or less fluidity: and he regards it as certain, that the alteration of the fluids contained in these vesicles is the sole immediate cause of inflammatory diseases.

"To the attraction of the blood in the capillary branches of the arterial system, M. Dutrochet ascribes the empty state of its vessels after death; and contends that both the full state of the veins, and the cause of the progression of the blood in them towards the heart, may be explained on the same principles as the ascent of the sap in plants. He admits, however, that other circumstances influence the flow of the blood in the veins; as for example, when there are no capillary ramifications between an artery and a vein, but the one vessel terminates directly in the other, as in the young salamander, in which case the contractile power of the heart is felt through the whole circuit. He regards the idea of a contractile power in the capillary vessels as purely hypothetical; for although these vessels may re-act upon the blood by their elasticity, no real contraction, "incurvation des fibres," has ever been detected. He does not deny the probability of Dr. Barry's theory, that the pressure of the atmosphere, in conjunction with a vacuum formed in the chest during respiration, is the cause of the progression of the venous blood towards the heart, but regards it as an accessory peculiar to the mammalia and birds.

'Thus the circulation of the blood is a complex phenomenon, depending on the concurrence of many different causes, at the head of which is found for one part, the contraction of the heart, and for another, the endosmose of the capillaries; endosmose, which is, at the same time, the cause of adfluxion and that of impulsion.'—p. 196.

"He also applies his theory, with much apparent success, to the lymphatic system, and regards the ganglions as motory organs, maintaining, by adfluxion and impulsion, the motion of the fluids in these capillary vessels.

"We have already stated the opinion of our author, that inflammation or morbid hyperendosmose depends, chiefly, upon the alteration of the substances contained in the elementary vesicles. These may, nevertheless, preserve their integrity, for it is not the containing but the contained parts which are altered. The adfluxion in morbid hyperendosmose extends itself according to the intensity of the disease; and if it be what is termed a vital part that is affected, this becomes a dangerous centre of adfluxion, unless we can divert the fluids to another point by exciting a more powerful hyperendosmose in a less vital part. It is in this manner, according to our author, that blisters, some kinds of purgatives, leeches, and all revelling agents operate; and on this principle he accounts for the benefit derived from the application of cupping glasses in cases of poisoned wounds.

"We must admit, with M. Dutrochet, that the means of combating inflammation have been, hitherto, almost empirical. He, however, conceives that the theory which he has advanced throws considerable light on the physiology of this diseased state, and confidently assumes the following as the most rational method of curing morbid hyperendosmose.

"1. The abstraction of the substance, the presence of which in the organic tissue causes hyperendosmose. When this is a solid body, it must be mechanically abstracted; and if it proceed from an altered state of fluids, the changed fluids must be evacuated by leeches and scarifications, with cupping: the efficacy of which in relieving inflammation experience has fully established.

"2. General blood-letting, by diminishing the flow of the arterial blood in all parts of the body, must necessarily lessen it in the inflamed, or, in our author's words, hyperendosmosed part: and as the void thus caused in the large vessels can only be filled by the general depletion of the capillaries, the inflamed part will become less turgid, and the hyperendosmose be diminished.

"3. Leeches and cupping in the vicinity of an inflamed part relieve the hyperendosmose in two ways. 1. The evacuation of the blood procures the general depletion of the vessels. 2. Their suction causes a derivation in the direction of the affluxion.

"4. An energetic hyperendosmose excited in one part, tends to diminish this state existing in another part. This is the result of the change produced in the direction of the affluxion, the fluids being always directed to that part in which

the most powerful hyperendosmose exists. In this way blisters operate, and the relief is always in proportion to the evacuation produced.

"5. As the addition of water, by thinning the fluid contained in the organic tissue, or by weakening its chemical qualities, diminishes the intensity of the endosmose, the introduction of water into the organic tissues is a powerful method of combating inflammation.

"6. As there are inflammations, or states of morbid hyperendosmose, which cannot be cured by the means above-mentioned, M. Dutrochet conceives that his theory points out a sixth method of cure. We know, says he, that fluids introduced into the organic tissue by endosmose expel those which already exist in it; so that, in a state of morbid hyperendosmose caused by a chemical change of the fluids, if we can introduce into the organic tissue chemical fluids capable of producing a greater hyperendosmose than already exists, the matters causing this will be expelled by means of the increased activity of the endosmose. In this manner cantharides and many other acrid matters prove useful; and mercury cures syphilis. To this principle also, without our author being aware of it, may be referred the cure of syphilis without mercury, by simple dilution and rest, as has been lately practised. The acrimony of the virus is gradually lessened, the energy of the endosmose diminished, and the disposition to the formation of the morbid state of the fluids, which had been induced by the introduction of the virus, is overcome by the restoration of the milder state of the secreted fluids, selected from the nutritive juices.

"7. The intensity of the hyperendosmose may be diminished by the introduction into the economy of certain causes of *exosmose*. Acids, in general, are of this description, and it is probably this property which renders acidulous beverages so useful in inflammations. On the contrary, M. Dutrochet regards solutions of gum, of extract, and of sugar hurtful, as being productive of endosmose. If emollient cataplasms produce a beneficial effect, when applied to inflamed parts, it is to be ascribed, according to our author, to the fluid being absorbed, and favouring exosmose: and he is of opinion that baths can be useful only as the liquids used for forming them are more or less dense than the organic fluids, depending on the nature of the disease.

"M. Dutrochet having concluded his remarks on inflammation, commences the consideration of the advantages resulting from the application of his theory to animal *absorption* and *exhalation*. He objects to the theory advanced by M. Majendie, that absorption is the simple result of capillary attraction: and then proceeds to prove, that absorption is the result of endosmose; and that elective absorption depends altogether upon the relation of the fluids exterior to the organic tissue and those contained in it. Thus, in the intestines, chyle is absorbed, but fæcal matters are rejected, because, as his experiments have proved, fæcal matter is an agent productive of exosmose, while chyle possesses the opposite property.

"'If then the chyle possesses such qualities as fits it to be absorbed by the organic tissue, for the same reason the fecal matter possesses qualities which cause it to be rejected.'—p. 214.

"The mucous membrane of the intestines is a chemical filter, that permits those substances only which are endowed with certain chemical qualities to pass: but although this is a species of secretion, yet it is merely a separation of mixed substances; similar, for example, to the secretion of urea by the kidneys; for it is well known, from the experiments of M. Prevost and Dumas, that urea exists ready formed in blood: whereas many secretions are the result of a separation and a new combination of the elements of the nutritious fluid. The general theory of secretion of vegetables is applicable to animals: and the organs employed in this function, like those of vegetables, are hollow sacs or cells, through the sides of which the secreted fluid is introduced. This is manifest in insects and the mollusca, the secretory organs of which are composed of a congeries of vesicles, among which the blood-vessels and the excretory canals ramify. The sides of these vesicles are true chemical filters, which, un-

der the influence of an electrical current, transmit, whilst at the same time they modify, certain elements of the nutritive fluid. The secreted fluid is expelled, in the natural state, towards the excretory canals; but, if these be obstructed, it passes into the blood-vessels, thence result certain morbid accidents. In this point of view, nutrition itself is a modification of secretion: the nervous vesicles secrete the nervous matter which fills them, and the muscular vesicles that substance to which they owe their peculiar vital properties. 'Each of these vesicles expel at the same time substances previously secreted, and these fall into the blood-vessels, the only excretory vessels of secretion and nutrition.'—p. 217.

"M. Dutrochet conceives, with much truth, that there is no continual waste and renewal of the solid parts, as is generally supposed; and adds, 'if the containing parts renewed themselves continually, like the contained parts, it is probable that death from old age would never happen, since the living being would never be old.'—p. 218."

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7. *On the Absorbents in Fishes.* By Professor Fohmann.—More than half a century has elapsed since the discovery of the absorbents in birds, reptiles, and fishes, by Monro and Hewson, and during that period our knowledge on the subject, has made but very slender advances. Professor Fohmann, recently of Heidelberg, now of the University of Liege, has recently been investigating the absorbents in fishes, and he has not only discovered them in many of this class in which their existence had not previously been demonstrated, but has also given in a late work, *(Das Sangadersystem der Fische,)* a more accurate account of them than has ever hitherto been published.

Monro and Hewson state that the absorbents terminate or rather originate by open mouths; Professor Fohman, after giving good grounds for doubting the accuracy of the observations of the former, and showing the fallacy of the experiments of the latter, states "that he never could discover open mouths in the absorbents of the torpedo and sea-wolf, in whom those of the mucous membrane of the intestinal canal can be seen and accurately examined by the naked eye; and as little could he find them in those of other species of this class of animals. He states that these vessels in fishes invariably terminate in blind extremities, *en cul de sac*, at this place constituting tubes of greater diameter than they do a little further from their commencement—i. e. in their course towards the centre of circulation; and that, in most parts of the body, they here represent pouches or dilatations, which have an internal smooth surface, and an external one having more or less resemblance to the appearance of cellular substance.

"It is known that in fishes the absorbents have no valves, with the exception of the places where they terminate in the venous system, and also that there are no absorbent glands. These vessels, however, do not preserve a continuous vascular character throughout their course. Having preserved this for a short distance, they suddenly increase in size, run together, and either constitute or terminate in sacculi or plexuses. The internal surface of these sacculi or plexuses does not present a smooth surface, but a rough irregular one of filamentous, membranous, or cellular substance-like projections; so that what externally appears as one simple sac, is divided internally into several by these lamellæ, *(blätchen.)* This is readily seen in the absorbent sacculi, *(sangadersäcken,)* in the vicinity of the stomach and intestinal canal of the eel, and in the absorbent plexuses, *(sangadergeflechten,)* of the stomach of the torpedo. These absorbent sacs and plexuses, which are not confined to the class of fishes, but are met with in the amphibiæ, are parts well worthy of notice and consideration.

"On the subject of the communication between the absorbents and veins, our author observes, that those who have assumed such a communication to exist, do not seem to have bestowed sufficient time on their investigations, and have not gone to work with the caution and precision which this very difficult sub-

ject requires. He instances the observations of Lippi* as being particularly liable to this objection, and not at all to be depended on; in truth, they are full of error. The observations of the Italian are asserted to have been founded on examination of the absorbents in man, the horse, and the goose. He represents a connexion as existing between the extremities of the absorbents and extremities of the veins, like that between the capillary arteries and veins, the one kind of vessel passing into, or rather continuing itself into the other. Fohmann, after the most numerous and successful injections of the absorbents in man and the mammalia, has never seen this communication. The circulating system forms a shut circle; the only communication between absorbents and veins is that where the absorbent opens through the coats of the vein, *insertio lateralis;* all communication between capillary vessels is *insertio terminalis*—the transition of the extremity of an artery into the commencement of a vein. Lippi has represented the absorbents as communicating by means of greater or smaller twigs, branches, and trunks, with the venous system, and that out of the limit of the absorbent glands, those twigs, branches; and trunks opening directly into the vena cava, the internal pudic and emulgent veins, and the vena azygos. Fohmann asserts that, in man and the mammalia, a communication between the veins and absorbents only takes place in the absorbent glands; and that none exists by means of such large vessels, or out of the absorbent glands, as stated by Lippi, who, in fact, has taken veins for absorbents. In the animals in whom absorbent glands do not for the most part exist, in fish, amphibiæ, and birds, we can observe the communication between the absorbents and veins, in different parts of the body, with the naked eye. The absorbents which Lippi represents as proceeding from the under part of the intestines of the goose into the renal vein, are the vessels of whose connexion with the renal or sacral vein Fohmann gives an account in his small work published six years ago.

"A curious circumstance discovered by our author in certain fishes, is that the contents of the absorbents are not all poured directly into the venous system. In the eel, for instance, a branch goes off from the trunk of the absorbent system, representing the thoracic duct, towards a small receptacle in the vicinity of the gills. Out of this globular receptacle proceeds a vessel, which divides into branches; these branches are distributed to the gills, in the same way as those of the pulmonary artery, and from their extremities are returning vessels, which bring back the lymph, in the same way as the pulmonary veins return the blood; the trunk formed by these branches opens into the thoracic duct immediately before its termination in the jugular vein."—*Lond. Med. and Phys. Journ. Oct.* 1827.

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8. *On the Gastric Juice.*—"The *Gastric Juice*, which has been made so frequently the subject of inquiry, and with such discordant results, has been examined anew, both by Leuret and Lassaigne, and by Tiedemann and Gmelin; and our information as to its properties and agency in digestion has in consequence been rendered much more precise. Under this head the most extensive and valuable researches unquestionably appear to be those of Tiedemann and Gmelin.

"MM. Leuret and Lassaigne allege they have invariably found the gastric juice to be acid; they state its component parts to be water, hydrochlorate of ammonia, chloride of sodium, mucus, an animal principle soluble in water, phosphate of lime, *lactic* acid; and they impugn the accuracy of the experiments of Dr. Prout, who, it is well known, was lately led to infer that the free acid evolved during digestion is the hydrochloric.

"The Heidelberg physiologists, on the contrary, inform us, that if the contents of the stomach be examined after a long fast, and without any stimulus

* Illustrazioni Fisciologiche del Systema Linfatico-chilifero Mediante la Scoparta di un gran numero di Communicazioni di esso col Venoso; del Prof. Regolo Lippi, Firenze, 1825, 4.

being applied to its villous membrane, the fluid found in it is a clear, ropy, faintly-opaque liquid, which is almost or entirely destitute of acidity. But if any stimulus, even of the simplest kind, is applied to the inside of the stomach, then the fluid secreted is uniformly acid, and the degree of acidity appears to be proportional to the degree of the stimulus. Pure gastric juice they found to be best procured by making animals swallow quartz pebbles after a long fast, and killing them in an hour. It was generally grayish-white, ropy, and decidedly acid. It contained, as procured from the dog and the horse, some mucus, osmazome, and salivary matter, alkaline sulphates and hydrochlorates, the alkali being chiefly soda, phosphate and muriate of lime, other salts in minute proportion; and the acidity was owing to the *hydrochloric and acetic acids* in the dog, and to these conjoined with the *butyric acid* in the horse. That part of their chemical inquiries which regards the free acids seems to have been conducted with great care; and certain criticisms of Leuret and Lassaigne have given occasion to an appendix, consisting of a defence of themselves, and of Dr. Prout, which we cannot help thinking is quite satisfactory. As the lactic acid of Leuret and Lassaigne is now acknowledged by Berzelius to be a variety of the acetic, all parties may be understood to be agreed as to the existence of that acid in the gastric juice. The researches of Prout, Children, and Graves, confirmed as they have been so amply by Tiedemann and Gmelin, likewise establish the presence of the hydrochloric acid. The existence of the butyric is more doubtful.

"When the secretion of the gastric juice is elicited by its natural stimulus, food of various kinds, it has been remarked by Leuret and Lassaigne, as well as by Tiedemann and Gmelin, that the chymous mass is invariably acid, and that its acidity is owing to the acids mentioned above; and Tiedemann and Gmelin farther maintain as the result of their experiments, that its acidity is greatest when the food is most difficult of digestion. In dogs and cats the greatest acidity was remarked when they were fed with coagulated albumen, fibrin, bones, gristle; it was less when they were fed on starch, gelatin, potatoes, rice, and when they were fed with liquid albumen, the alkalinity of the food was nearly sufficient to neutralize the acidity of the gastric juice. The quantity secreted during digestion seems to be very great; Leuret and Lassaigne having found, that when the gullet of a horse was tied so as to prevent the secretions of the mouth and gullet from entering the stomach, a full meal of oats became completely saturated with juice in four or five hours.

"So much with regard to the nature and composition of this fluid. Its power of dissolving the food has likewise been made the subject of experiment by the Parisian and by the Heidelberg physiologists; and they agree in confirming the statements of Spallanzani, Stevens, Grosse, and others, and in contradicting the later results of Montégre, who imagined he found that the gastric juice does not act out of the body, and whose opinion has since regulated that of the French school generally. MM. Leuret and Lassaigne remarked that the fluid procured by long sponges from the stomach of a duck while fasting, when kept upon bread crumbs at a temperature of 88° Fahr. soon divided them into minute particles, and formed with them a homogeneous mass precisely like chyme; and that when flesh was mixed with the gastric juice of the dog, it was quickly softened and lost weight. The observations of Tiedemann and Gmelin are more detailed. The fluid found in the stomach of the dog during the digestion of bones and coagulated albumen was made the subject of experiment, and comparative observations were made with water and with milk. Various kinds of food were tried, such as bread, coagulated albumen, raw flesh, boiled flesh; and in every instance it was observed that the bread was broken down in the course of eight or ten hours into a pap, and the surface of the beef and of the albumen was converted into a pulp, which could be easily scraped off. It is evident that Montégre failed in procuring similar results, because the fluid with which he operated was not gastric juice, secreted in consequence of the application of some stimulus to the stomach, but a mixture of saliva, the mu-

cus of the gullet, and the fluid which Tiedemann and Gmelin found in the stomach while empty of food and not stimulated.

"The solvent power of the gastric juice, therefore, is now placed beyond all question. It is only the German experimentalists who have thought of trying whether this property is accounted for by the composition of the fluid; and of attempting to accomplish, by means of the simple substances contained in the gastric juice, the same solution or digestion which is effected by the gastric juice itself. Their experiments, however, are not complete. They have remarked, that dilute acetic acid, dilute hydrochloric acid, a weak solution of acetate of ammonia, and a solution of hydrochlorate of ammonia, severally dissolve more or less of most animal substances which are used as articles of food. They have not tried their effects conjunctly, as they exist in the gastric juice.

"Although these experiments, however, are not satisfactory, no doubt can exist that the gastric juice possesses the power, as a mere chemical agent, of effecting the solution of a great variety of kinds of food. Whether this chemical property is, with the aid of the churning action of the stomach, sufficient for effecting the process of chymification, remains now to be considered. The mucous crypts of the stomach evidently pour out an abundant mucus; but it is probable that this only serves for lubricating the stomach and food, and perhaps for diluting it. It is impossible, indeed, to collect the mucus of the stomach, so as to ascertain whether or not it possesses also the power of dissolving vegetable and animal matter: but this certainly appears improbable. The bile has no share, as has been imagined by some physiologists, in converting the food into chyme. According to the late experiments of Brodie and Mayo, and those presently to be mentioned of Leuret and Lassaigne, and of Tiedemann and Gmelin, chymification goes on perfectly in animals fed after the biliary duct has been tied. There is no other apparent agent, therefore, in the process, except the gastric juice and the muscular action of the stomach. It appears to us, however, that the question should have been set at rest by subjecting the food during artificial digestion to a process of churning, equivalent to that to which it is subjected by the stomach, and then comparing the chemical changes which take place with those produced on the principles contained in the food after they have been subjected to natural chymification."—*Ed. Med. and Surg. Journ. October*, 1827.

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9. *On the uses of the Bile.* By Professors Tiedemann and Gmelin.—Professors Tiedemann and Gmelin, conceive, in the first place, that the bile by its stimulant properties "excites the flow of the intestinal fluids, which is clearly proved to be the case by the unusual dryness of the feces in jaundiced persons, and in animals whose duct has been tied. In the next place, it probably stimulates the intestinal muscles to action. In the third place, considering the abundance of highly azotized principles it contains, it probably contributes to animalize those articles of food which do not contain azote. Fourthly, they believe it tends to prevent the putrefaction of the food during its course through the intestines, because when it is prevented from flowing into them their contents appear much farther advanced in decay than in the healthy state. Fifthly, as already mentioned, it probably tends to liquefy and render soluble the fatty part of the food. But, lastly, they are disposed to consider it also as an important excretion.

"The arguments by which they endeavour to support this opinion, and more particularly to prove that it is supplementary to the function of the lungs, are ingenious, if not conclusive. They first show, from the relative size of the *vena portæ* and hepatic ducts, from the more intimate connexion of the biliary capillaries with those of the *vena portæ*, than with those of the hepatic artery; and, finally, from the experiments of Malpighi, recently confirmed by those of Simon—that the bile is a secretion from venous, not from arterial blood. They next prove that a great number of the principles of the bile, such as its resin, colouring matter, fatty matter, mucus, and salts, are thrown out of the body

with the feces, in the natural state of the biliary system, or by the urine, and into the cellular tissue, when the excretory duct of the liver is obstructed. These principles all contain a large proportion of carbon, and would appear, therefore, to be intended to carry off the excess of that element which is introduced into the system with the vegetable part of the food, and which is not thrown off by the lungs. In the lungs it is thrown off in a state of oxidation; in the liver it is thrown off chiefly in union with hydrogen, as in the form of resin and fatty matter. That the bile is thus intended to assist the lungs in decarbonizing the blood appears, they conceive, from the following facts. The resin of the bile abounds most in herbivorous animals, whose food contains a great disproportion of carbon and hydrogen. But, what is of more importance, the pulmonary and biliary organs are in different tribes of animals, nay, even in different individuals of the same species, in a state of *antagonism* to one another. The size of the liver and the quantity of the bile are not proportionate to the quantity of food and frequency of eating; but inversely proportional to the size and perfection of the lungs. Thus, in those warm-blooded animals, which have large lungs, and live always in the air, the liver, compared with the body, is proportionally less than in those which live partly in water. The liver is proportionally still larger in reptiles which have lungs with large cells, incapable of rapidly decarbonizing the blood—and in fishes, which decarbonize the blood but slowly by the gills—and above all, in molluscous animals, which effect the same change very slowly either by gills or by small imperfectly developed lungs. It is also worthy of remark, that the quantity of venous blood sent through the liver increases as the pulmonary system becomes less perfect. In the mammalia and in birds the *vena portæ* is formed by the veins of the stomach, intestines, spleen, and pancreas; in the tortoise it receives also the veins of the hind-legs, pelvis, tail, and the *vena azygos;* in serpents it receives the right renal, and all the intercostal veins; in fishes it receives the renal veins, and those of the tail and genital organs. Farther, during the hybernation of certain animals of the class mammalia, when the respiration is suspended, and no food is taken, the secretion of bile goes on. Another argument is drawn from the physiology of the fœtus, in which the liver is proportionally a great deal larger than in the adult, and in which the bile is secreted abundantly, as appears from the great increase of the meconium during the latter months of utero-gestation. The last argument is drawn from pathological facts. In pneumonia and phthisis the secretion of the bile, according to the observations of our authors, is increased; in diseases of the heart the liver is enlarged, and in the *morbus cæruleus* the liver retains its fœtal state of disproportion. In hot climates, too, where, in consequence of the greater rarefaction of the air, respiration is less perfectly carried on than in colder climates, a vicarious decarbonization is established by an increased flow of the bile."—*Ibid.*

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10. *On the Chyle.* By Professors TIEDEMANN and GMELIN.—"Chyle is now well known to consist of a serous and a fibrinous part, the latter of which separates like that of the blood by spontaneous coagulation. The firmness of the coagulum seems to depend chiefly on the quantity of fibrin. Chyle hardly coagulates at all before it has passed through the mesenteric glands. After passing through them, the fibrin begins to appear, and it is much more abundant after the addition of the lymph from the spleen, which contains a very large quantity of fibrin. The quantity is considerably lessened in the chyle of digestion; and it is increased in the chyle formed after the ligature of the *ductus choledochus.* It abounds in the lymph from the lower extremities. In like manner the chyle before passing the mesenteric glands contains no red particles; but it does immediately afterwards, and more particularly after it is mixed with the lymph from the spleen, which abounds with them as with fibrin. These particles are also, like the fibrin, very much diminished in the chyle of digestion, and proportionally to the nutritiveness and digestibility of the food. They are increased by tying the choledochus duct. They abound in the lymph

of the lower extremities. The chyle frequently contains fatty matter—very little or none, however, if the animal is fasting, or has fed on food which does not contain fat—and most when the food is very fatty, when, for example, butter is mixed with it. The fatty matter is not dissolved, but exists merely in a state of minute division and suspension, giving to the chyle its peculiar white colour; for the colour is removed, and the chyle rendered limpid by ether which carries away the fatty particles. There is no fatty matter in the lymph of the lower extremities; it is much less abundant in the thoracic duct than in the chyle before it passes through the mesenteric glands, and it hardly exists in the chyle at all when the ductus choledochus is tied. The serum of the chyle is very generally alkaline; in two instances only, was it found neutral, namely, in a dog fed on fibrin, and in a sheep fed on oats. Its solid contents differ in the chyle of fasting animals and in that of digestion. In the horse while fasting the solid part of the serum consists on an average of 76.2 per cent. of albumen, 6.7 of animal matter soluble in water, and 16 animal matter soluble in alcohol; but after digestion of 61 albumen, 3 animal matter soluble in water, 34 animal matter soluble in alcohol, of which twenty parts were fat. Our authors were not able to decide whether the total amount of solid matter in the serum is increased or diminished during digestion."—*Ibid.*

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11. *Superfœtation.*—A mare, five years old, was delivered at intervals of a quarter of an hour, first of a horse and then of a mule. She had been covered by a horse and five days afterwards by an ass.

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12. *Nourishment by Clysters.*—Sir Astley Cooper mentions that he knew a lady who had a stricture in her œsophagus, who was supported forty-five days by clysters of broth and wine, when she could not swallow even a drop of water.—*Lectures on Surgery, Vol. III.*

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13. *Metastasis of Erysipelas of the Head, to the Serous Membrane of the Heart.* By Robert Adams, Esq.—Mr. Adams thinks that there can be no doubt that erysipelas affects the heart. He has, he says, seen two cases of erysipelas of of the head and face which terminated fatally by metastasis to the heart. "In one, the erysipelas succeeded to a wound in the head, in the other, it came on spontaneously. In both, as soon as the external redness receded, the breathing became distressed; the countenance agitated, and rest in the horizontal position impossible. Yet the general symptoms of pericarditis were so obscure, as to excite no suspicion in the mind of the attendants as to the real nature of the case. Both were weak and debilitated patients, in which this affection supervened towards the close of a long illness: neither lived more than two days after the sudden disappearance from the surface of the erysipelatous redness. The countenance, the breathing, the state of the pulse, and apparent debility in both, seemed to forbid any active interference on the part of the medical attendants, who had no suspicion of the real nature of the case, (so obscure were the symptoms of pericarditis,) until the examination of the body disclosed it. The pericardium contained some turbid fluid, but had contracted no adhesions to the heart. A quantity of lymph, evidently recently effused, lined the concavity of the pericardium, and thickly and unequally covered the surface of the heart itself: appearances which left no doubt as to the immediate cause of the death of these individuals. The late Mr. Thomas Roney and Mr. Cusack met with similar cases; and the latter preserves a specimen of the morbid appearances which the dissection of a similar case presented, in the museum in Park street."—*Dublin Hospital Reports, Vol. IV.*

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14. *Case of Conception with Closure of the Vagina.*—Professor Rossi relates the case of a married woman, who was attacked with violent abdominal pains. On examining the patient, he found that the external organs of generation were entirely wanting, that there were no hairs on the mons veneris, and that there

did not exist any signs of puberty. He therefore could not entertain the idea of her being pregnant, but attributed the pains to there not existing any passage for the discharge of the menses; he therefore opened an artificial passage for them by making an incision three inches long in the direction of the vagina, and, on introducing his finger, he ascertained that the woman was really in labour. He enlarged the incision a little and the woman was delivered of a live male fœtus. M. Rossi prevented the new-made vagina from closing by introducing into it a piece of intestine which he then distended with air. This vagina afterwards admitted the introduction of the penis, and two years afterwards the woman was safely delivered of a second child. As M. Rossi thought it impossible that the patient could conceive without there existing any external communication, he inquired of the husband, and discovered near the sphincter of the anus at its internal part, a very small opening, which would scarcely admit a very fine probe, and communicating with the artificial vagina. —*Memorie della Reale Acad. delle Sc. di Torino*, Tomo xxx.

15. *Causes of Monstrosities.*—M. Velpeau has read to the Philomathique Society of Paris a memoir on this subject. He is of opinion that in a great number of cases, the monstrosity is the result of disease of the embryo, and particularly that the formation of two acephalous fœtuses which he presented could not in any other way be explained. The first was perfect except the cranium and brain, which were wanting, and bore evident traces of disease; the second was a mere trunk, the head, neck, and all the extremities being absent, and Mr. V. thinks that nothing could better explain the deficiency of the members than the supposition that they had been destroyed by gangrene. M. Larrey observed that this opinion of the causes of monsters is not new; that it prevails in Germany; and that there is at Berlin a valuable collection, which appears strongly to confirm the belief that monsters are the result of different diseases in the fœtus.—*Bulletin des Sciences Médicales, Aout*, 1827.

PATHOLOGY.

16. *Clinical Report on the State of Fever.* By M. Bally.—It is, says M. Bally, "by connecting morbid phenomena with the local lesions on which they depend or are connected, that the moderns have arrived at exact knowledge of those grave and complex affections to which the ancients have applied the vague terms of putrid, malignant, nervous, and adynamic fevers, which are in reality veritable *gastro-enterites* degenerated, or as they are more properly and precisely termed by M. B. *ileo-diclidites*, signifying *inflammation of the ileum and upper surface of the valve of the colon*, the parts most commonly affected in fevers. In examining the cases of fever detailed by various authors, and by Pinel among the rest, he considers it impossible not to conclude that the majority laboured under that state of the intestinal canal so well described by Broussais and his disciples. Those who have taken the pains to open many bodies after death by fever, afford innumerable proofs of the phenomenon in question, though they looked upon the disease as a concomitant or consequence rather than a cause of fever. In short, says he, if we compare the descriptions of putrid and malignant fevers, as handed down to us, with those of the gastro-enterites of the present day, we cannot but be struck with the resemblance. All allow that inflammation of the mucous membrane is a very common *attendant* on fever—and for his own part, M. Bally believes it to be the disease itself, or at least the first and principal lesion in fever.

"The fevers of the last quarter of 1826 have tended to confirm M. Bally in the truth of this doctrine; and what is more, they have enabled him to make some distinctions not hitherto much noticed, and to adopt an important and successful method of treatment.

"Scarcely had intermittents begun to subside, when inflammations of the digestive tube became prevalent. Some of them were hæmorrhagic, and terminated fatally in a very prompt manner. The greater number, however, assumed a low or typhoid type. These forms were more dangerous in proportion, as they succeeded early to the intermittent epidemic; and M. Bally conceived that there was an intimate connexion between the two epidemics, especially as the gastro-enterites frequently assumed a quotidian intermittent character. When this was the case, the antiphlogistic treatment did not succeed, and the sulphate of quinine was effectual. The state of adynamia, which often supervened in the course, or towards the close of the fever, did not appear to result from any primitive debility of the subject, or as consecutive of gastro-enteritis; but it seemed often to depend on the lesion of some other organ, over which the antiphlogistic treatment had not effectual control. The rigidity of the limbs, the tremors, the subsultus tendinum, the throwing back of the head, the delirium, the ramblings, the loquacity, the difficulty of expanding the chest—all these functional disorders, says our author, were far from constituting the debility. They showed themselves during the existence of the most acute irritation, and they subsided with it under a very active system of depletion. They must, therefore, have depended on disorder of some particular organ.

"M. Fodera considers the superior portion of the spinal marrow as the principal seat of affections truly adynamic; and our author partakes of the same opinion. He thinks this is confirmed both by experiments and by pathological anatomy. The above portion of spinal marrow has been often found softened in the dead body by our author, M. Bally. Stoll, whose authority is good on all points of practical observation, long ago remarked that putrid fevers did not always infer fevers of debility. He was somewhat astonished to find that bleeding and other evacuations cured the disease better than tonics. The oppression and the prostration of muscular power, although different in their nature, acknowledge the same cause. 'The first results from congestion; the second from inflammation of the spinal marrow.' Bleeding, he observes, is more effectual in relieving the former than the latter condition of parts. 'Thus, in the beginning of all adynamic fevers, the symptoms which constitute debility are owing to congestion or inflammation of the spinal marrow, either primitive or consecutive of gastro-enteritis.' We agree with our author that great errors are daily committed by pathologists in considering that there can be no *disorder* in a part during life, if no trace of change of structure be discernible after death. The organization of the brain, nerves, and their investing membranes, is so very delicate, that disorder of function sufficient to destroy life every day occurs, without alteration of structure. Hence the necessity of taking into consideration the symptoms, as well as the *post mortem* investigations.

"Numerous dissections, made with the greatest care, have convinced M. Bally that inflammation of the lower portion of the small intestine, and upper surface of the ileo-cæcal valve, constitutes the first period of what are termed putrid or typhus fevers. If this inflammation be checked by nature or art, the subsequent symptoms of debility or putrescency do not occur. If not, the disease proceeds to ulceration or destruction of the mucous membrane. It is very rare to find any alteration of structure in the duodenum, jejunum, or colon. The cæcum itself is seldom affected, although the upper surface of the valve is so generally implicated in the disease. What can be the cause of this locality of the disease in the part above mentioned? M. Bally attributes it to the difference of acrimony in the contents of the small and of the large intestines. Nature, he says, is sometimes equal to the task of curing these ileo-cæcal inflammations, and in one instance this was effected by a profuse nasal hæmorrhage.

"The division of the disease into two stages or periods, is not only philosophic, but of great importance in a therapeutic point of view. In the first period, or that of inflammation, the antiphlogistic treatment may arrest the progress of the disease, and prevent the degeneration of the fever into the pu-

trid or ulcerative form. But this disease, though so formidable and fatal in its advanced stages, does yet commence in so insidious a manner, that the patient is not soon enough alarmed, and is seldom sent to an hospital till after the first or second week, when the local affection has made great head, and when the constitutional symptoms veil those of the primary topical affection. As soon as the symptoms indicate that the inflammation is passing into the state of ulceration, M. B. thinks it is necessary to abandon the antiphlogistic treatment, as far as sanguineous depletion is concerned, and to have recourse to powerful counter-irritation, so as to attract to the surface that morbid excitement which is going on internally. He does not, however, employ blisters for the purpose of counter-irritation. He has not seen advantage arise from their application in ileo-diclidites, but on the contrary, disadvantage, from the property which the lytta has of causing irritation in the internal tissues. Mustard cataplasms have produced much better effects in the way of revulsion, when the brain or other organ was sympathetically affected. But he seems to place his principal dependence on a plentiful crop of pustules, brought out by tartar emetic in the umbilical region. He has never seen any reason to conclude that the antimony is absorbed on these occasions. M. Bally employs a tartar emetic plaster rather than ointment, to the abdomen, it is far less troublesome, and far more powerful than the unctuous frictions. He sometimes applies a dozen of leeches to the part, and as soon as these animals fall off, he places a Burgundy pitch plaster, well powdered with tartrate of antimony, over the leech bites. In less than forty-eight or sixty-four hours, a plentiful crop of pustules is elicited, each pustule surrounded by an areola of inflammation. If any species of counter-irritation can relieve the internal malady, this will do the business. In very grave cases, M. Bally employs an antimoniated drink for several days in succession, with the view of copiously evacuating the acrimonious contents of the small intestines, which prove a powerful source of internal irritation.

"'Finally,' says he, 'when quotidian exacerbations, analogous to the periodical accessions of an intermittent fever, become associated with the ileo-cæcal affection, the sulphate of quinine is to be exhibited, notwithstanding the redness of the tongue, the abdominal pains, the diarrhœa, and the various other signs of inflammation of the mucous membrane of the intestines.'"

M. Bally has given a number of cases illustrative of the doctrine which he maintains, and he considers them as proving that the peculiar inflammation and ulceration seen in these fevers, is not a common gastro-enteritis—the stomach being rarely affected, and that only secondarily—but an *ileo-diclidite*, or affection of the ilium and superior surface of the valve of the colon. M. B. dwells on the importance of recognising this pathology of the disease, if it be correct, as it will tend to restrain the routine practitioner from throwing in stimulants and tonics at an early stage of the disease, from dread of debility, and induce him to use proper depletion and cooling aperients, in order to prevent the ulcerative stage, that may otherwise ensue.

We have space for only one of the cases related by M. Bally in illustration, and we select a fatal case in order to show the appearances on dissection—cases of a similar description will be found in the report of our coadjutor Dr. Jackson, in the present number of this Journal, and we may further remark that the post mortem examinations at the Alms-house infirmary of this city, have shown the great frequency of ulcerations near the ileo-cæcal valve in fevers.

Case. "Etienne, aged twenty-seven years, entered the hospital Cochin on the 11th of October, stating that he had been ill a fortnight. He had passed the whole of a day in a damp cellar occupied in hard labour, and from this he dated his illness, which commenced with shiverings, cephalalgia, pains in his limbs, &c.—the shiverings coming on regularly in the evenings. He had taken plenty of hot wine and bouillon. 16*th day*. Face flushed—tongue coated in the middle, and red at the sides—thirst urgent—abdomen not tender—diarrhœa—pulse high, hard, and frequent—skin covered with perspiration. *Lemonade with gum—fifteen grains of sulphate of quinine in the twenty-four hours.*

17*th*. The same accession of symptoms in the evening—the same treatment. 18*th*. Delirium was added to the evening paroxysm, with watery diarrhœa—eighteen grains of sulphate of quinine. 19*th*. The evening accession was only known by a strong excitement of fever, the skin being moist. The sulphate of quinine suspended. 20*th day*. Tongue very dry and red—much alteration for the worse—pulse strong and frequent. 21*st day*. Delirium—decubitus dorsalis—nausea—pulse 90. 22*nd day*. Not much delirium, but great prostration of strength—tongue and lips fuliginous—abdomen distended. 23*d day*. Somnolency—head drawn backwards—subsultus tendinum—involuntary defæcation. The patient lingered on till the 38*th day*, when he became affected with tetanic rigidity throughout the whole body, and, in a few days more he expired.

"*Dissection*.—The colon and the abdomen, in general, were distended with gas. The mesenteric glands were enlarged and inflamed—coats of the stomach red, but not softened—duodenum contained a yellowish matter—internal surface of the ileum covered with innumerable ulcerations of various sizes, but increasing in number as the valve of the colon was approached. The mucous membrane in the interstices was much thickened. The liver and spleen were enlarged. There were various traces of inflammation and effusion in the brain and its ventricles, as well as in the spinal marrow. The latter was softened for the space of two inches opposite the sixth cervical vertebra, and also there was a softening abreast of the first vertebra, (counting from below,) extending down towards the 8th dorsal vertebra. There was no other lesion of any consequence in any part of the body."—*Medico-Chirurgical Review, from the Journ. Gén. de Médecine.*

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17. *Cancer of the Cardia*.—"A lady, aged about 40, became affected in the month of November, 1826, with common symptoms of dyspepsia, and her complaint was considered as such by her medical attendants. In the beginning of 1827, the patient began to complain of some difficulty in swallowing solid food, and sense of nausea at the stomach after meals. These symptoms gradually increased to inability to swallow food, or rejection of the food undigested a few minutes after it was taken, by a species of regurgitation rather than vomiting. Mr. Brodie, Dr. Johnson, Mr. Andrews, and others were consulted, and the case was considered to be disease about the cardiac orifice of the stomach. Blisters, local bleeding, and various means were used, without arresting, in the slightest degree, the rapid progress of the disease. During the month of May, very little food could be got into the stomach, and constant pain was complained of in the region of the cardia. The patient was nourished principally by enemata. In the beginning of June, she spat up, rather suddenly, a bloody kind of offensive matter, and all at once she acquired power, not only of swallowing, but of retaining the food. She now took a good deal of nourishment, and some faint hopes were entertained of recovery. But the discharge from the œsophagus increased in quantity, and became deteriorated in quality—the fever wasted the patient—the thirst was constant—bad matters were passed by stool—the stomach again rejected food, and death put an end to her sufferings towards the end of June. The dissection was carefully made by Mr. Howship, in the presence of Dr. Johnson, Mr. Andrews, and Mr. Carrick, of Kensington. The lower portion of œsophagus, where it enters into the stomach, was in a state of open or ulcerated cancer, for the space of about three inches. A communication had taken place with the right cavity of the chest, in which was found some sanious effusion, and a considerable portion of lung, contiguous to the original disease, was disorganized and broken down. The stomach itself, and intestines were sound.

"This disease was remarkable for the rapidity of its growth. Nine months previous to its fatal termination, the lady was in perfect health. In this respect, disease of the cardiac orifice of the stomach forms a striking contrast with that which affects the pyloric orifice. Where pyloric disease takes place, the food gets readily enough into the stomach—digestion goes on—and some chyme

passes into the duodenum till the last. Emaciation is slow and progressive, and vomiting is a pretty constant symptom some hours after the food is taken into the stomach. Where the cardia takes on disease, on the other hand, the food is, in a great measure, prevented from getting into the stomach, and is regurgitated rather than vomited. The system is deprived of nutriment, and death soon closes the scene."—*Medico-Chirurg. Review, Oct.* 1827.

18. *Disease of the Liver.*—"A gentleman of very social habits, but by no means intemperate, had complained for some years of occasional uneasiness in the epigastrium, with slight symptoms of dyspepsia. Only three months before his death he was in his usual state of health, and presided at a public dinner. He had, however, an eruption on his face, which he was anxious to have removed, and for that purpose, put himself under the care of Mr. Macilwain, and Mr. Brookes, of Lambeth. Mr. M. put the patient on a reduced scale of diet, consisting of a considerable proportion of vegetables, and gave some mild alterative and aperient medicines. By these means the eruption entirely disappeared from the face; but now a new train of symptoms occurred. Some fulness appeared just under the ensiform cartilage, attended with pain, and dyspeptic phenomena. For these symptoms, leeches were applied, and the usual remedies prescribed. But the fulness quickly increased, and Dr. Cholmely's attendance was had, in addition to that of the two other medical gentlemen. The epigastric swelling, however, made rapid progress, and it was soon discovered that the edge of the liver could be clearly traced extending from one hypochondrium to the other, considerably below the margins of the ribs. The biliary secretion was now considerably deranged—the countenance was sometimes tinged yellow—a sickly sallowness took place—much gastric irritability prevailed—and emaciation advanced. On the 14th July, Dr. Johnson was called in, in addition, and this was about ten weeks from the first appearance of epigastric swelling. There was now a large prominent tumour in the epigastrium, and the liver could be felt as low as the umbilicus, extending from one side to the other, with hard rounded edges. It was conjectured now that there was some morbid growth, probably of an hydatid, tuberculated, or fungoid nature, independently of the general enlargement of the liver, which might account for the large rounded prominence in the centre. Nothing could, of course, be done, but lessen the gastric irritability by anodynes and effervescing medicines, while motions were procured by aperients. The prominent symptoms were now paroxysms of severe pain along and under the edges of the enlarged liver, which pain was considered by the medical attendants as seated in the bowels, and not in the tumour itself. The unfortunate patient could only lie on his right side—he had constant fever—thickly coated tongue—thirst—loss of all appetite—very morbid secretions from the bowels—and loaded urine. His countenance was indicative of visceral disease. Sir Astley Cooper was now added, in consultation; but, alas! the disease was beyond the reach of art! The patient lingered till the 29th July, when he rather suddenly expired.

"Dr. Johnson and Mr. Brookes examined the body at eight o'clock the same evening. There was some serous effusion in the abdomen, which was principally occupied by an immense liver, or rather tumour of precisely the appearance of brain. Not a particle of the original natural structure of the organ could be discovered. All was a homogeneous encephaloid mass, in which neither vessel nor duct could be traced by the naked eye. This enormous encephaloid growth, (for it could hardly be called liver,) had pushed up the diaphragm before it, and reached to the very summit of the thorax on the right side, descending below the umbilicus. Extensive adhesions had glued it to the stomach, transverse arch of the colon, and other contiguous parts. In a groove on its concave surface was found the gall-bladder, containing a thin dark-coloured fluid bearing little resemblance to bile. There was no other disease worth mentioning."—*Ibid.*

19. *Diabetes Mellitus.*—A soldier, aged 40, was admitted into the Hospital of the Faculty of Medicine, of Strasburg, December 27, 1824. He had been affected with diabetes for three years previously, the cause of which was not known, but its progress was rapid, and "the patient was reduced to a state of marasmus. He had no pains in the region of the kidneys, nor could any lesion be discovered by external examination of the abdomen. The urine was copious and sweet—the appetite voracious—the thirst inextinguishable—tongue white and moist—pulse, temperature, and alvine excretions natural. The quantity of urine made each day amounted to upwards of 30 pints. Various remedies were used, without any impression being made on the complaint. The plan of Rollo was then tried. By the third day of this treatment, the quantity of urine was diminished to eight pints per diem, and a most abundant perspiration daily covered the surface. The qualities of the urine became nearly natural. But now the appetite failed, vomitings took place, constipation became obstinate, the thirst was still intense, febrile phenomena were developed, debility rapidly increased, and dyspnœa, with cough, were added to the other symptoms. The patient lingered out till the 10th March, 1825, seventy-two days from his entrance into the hospital, and then expired.

"*Dissection.*—There was nothing remarkable in the intestinal canal, except a few discoloured patches in the mucous membrane, which, in texture, was sound. There was also a very small ulceration of one of the mucous follicles in the lower portion of ileum, near the valve of the colon. No apparent change in the liver, spleen, pancreas, or kidneys. The vessels of these last were strongly injected. The ureters were dilated, and the urinary bladder was very capacious. Its coats were thickened, and their vessels and nerves strongly developed. In the chest, the morbid phenomena far exceeded the symptoms during life. There was hydrothorax in the left side—hepatization of the left lung, and, in its upper portion, a large cavernous excavation—universal adhesion of the right lung to the side, but its structure sound—hydro-pericardium—aneurismal dilatation of the pulmonary artery, two inches in diameter. There was no lesion in the brain or its membranes. The blood was every where fluid in the vessels, and mixed with air."—*Repertoire Generale, No.* 3.

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20. *Congenital Enlargement of the Heart.*—"Mr. J. was born in 1811, and was a sickly and feeble infant. When very young, he evinced a laborious state of breathing, and impeded functions of the heart and lungs. He spoke with volubility, but was often obliged to stop in the midst of his speeches, to take in breath. His lips were habitually of a blue colour, as well as the extremity of the nose, and the ends of the fingers. If he took any brisk exercise, he was soon panting for breath, and his heart in violent action. In this state he grew up—always in the doctor's hands—but never cured. It appears that he had several illnesses of an inflammatory character, for which he was bled, blistered, leeched, &c. It was observed that the *right* side of the chest was flattened in, and the *left* bulged out in the region of the heart. The left hypochondrium was also prominent. In short, it was evident that the functions of respiration and circulation were greatly disordered, but whether the structure of the heart and lungs was affected, was the question. At the age of puberty, all the symptoms above-mentioned became greatly exasperated, and in spite of various remedies, death put an end to the patient's sufferings.

"*Dissection.*—The left side of the chest seemed bulged out in the region of the heart, while the right side seemed depressed. The left arm was emaciated, the right was swelled. On opening the chest, they were astonished at the size of the heart. It occupied, in a great measure, both sides of the thorax! The pericardium contained about three ounces of water. The right auricle was prodigiously dilated, and its parietes attenuated. It contained a large quantity of coagulated blood, disposed in layers, and intermixed with fibrinous concretions. The pulmonary artery was dilated from its origin to its division into two branches, the right one of which was also dilated, while the left pulmonary ar-

tery was diminished, so that it would scarcely admit a probe. The ductus arteriosus was open, as in the fœtus, so as to give free communication between the pulmonary artery and the aorta. The foramen ovale was closed. The right ventricle of the heart was dilated and attenuated. The left ventricle and auricle were also greatly enlarged, but their parietes were proportionally thickened. What lung was left occupied the right side of the chest, and was gorged with blood. The left lung was reduced to almost nothing, and evidently performed no respiratory function. There was some effusion in the abdomen, and the liver was large and gorged with blood. The vena portæ and the vena cava were varicose.

"The narrator of the case, (M. Cogoreux,) thinks, and with great probability, that the heart was originally too large, and, consequently, pressed on, and ultimately annihilated the left lung—hence the enlargement of the pulmonary artery of the right lung. We see, in this case, two opposite conditions in the two sides of the heart. The right chambers were in a state of passive—the left, of active aneurism."—*Medico-Chirurg. Review, Oct.* 1827.

21. *Case of Inflammation of the Arteries.* By Richard Bright, M. D.—"On the 22d of May, 1812, a robust middled-aged sailor had his leg amputated below the knee, on account of a fungous tumour situated on the foot, and connected with the fascia plantaris. He was very irritable during the operation: he was afterwards obliged to have a catheter passed, and his pulse rose so much during the following day, that he was bled and put upon the use of nitre in his drink; after this he went on tolerably well, till the 27th, when he became very feverish, with obvious affection of the chest; a decidedly jaundiced tinge of the skin; and a most remarkable tenderness over the whole body, so that when his wrist was touched to feel his pulse, he immediately uttered a cry of complaint, and the same when any other part was pressed. He died on the 29th.

"Sectio Cadaveris.—On examining the stump it was found to be sloughy, a sinus extending about two inches along the popliteal artery. The artery itself near the part, and the femoral artery half way up the thigh, were internally of as bright a red colour as if they had been covered with arterial blood. The same appearance was distributed in patches throughout the other arteries which we examined; the arch of the aorta, and the aorta itself, the iliac and the brachial arteries; the colour, however, was in none so intense as in the femoral artery. The heart was natural; the pericardium loaded with fat. The lungs considerably gorged with blood; there was a small bony concretion in one lung. The pleura on the right side was healthy. The pleura on the left side, and particularly the portion lining the ribs, inflamed and covered with a thin coating of cream-like fluid exactly resembling pus: there was above a pint of fluid, like a mixture of serum and pus, in the cavity. The intestines were distended with flatus. The liver was rather hard, and in colour and appearance resembled the boiled liver of an ox. The gall-bladder adhered to the neighbouring intestines. The spleen soft. The pancreas natural. The kidneys firm, and of a light colour. I may here remark that I have seen the appearance to which I have alluded, in the arteries, and likewise in the lining membrane of the heart itself, in one or two other cases where death has followed severe operations, and where the patients have been peculiarly irritable; but where I do not know, that external tenderness had been noticed."—*Bright's Reports.*

22. *Case of Metastasis of Rheumatism from the Synovial Membrane of the Extremities to the Serous Membrane of the Heart.* By Robert Adams, Esq.—"A girl aged six years, was attacked severely with rheumatism, which engaged successively the principal joints, and showed itself in most of the muscles. Active measures, consisting of venesection, purgatives, together with the use of mercurials and the warm bath, proved successful. Convalescence was however slow. About three months after recovery from this attack "she became again afflicted with pain, swelling and redness of the ancle and knee joints; the least

motion was insupportable. There was great heat of skin, more particularly of the affected articulations; and remarkable frequency and hardness of the pulse, a loaded tongue, anorexia, in short, a combination of symptoms denoting high inflammatory action; although these were actively met by the appropriate remedies, they changed but little until the fourth day, about which time the inflammation leaving its original seat, passed along the muscles, forming the parieties of the abdomen and thorax, and in the latter region very particularly fixed itself on the left side over the heart. Presently, in addition to the hardness and frequency of the pulse, it presented a remarkable tremulous vibratory feel, and the little patient exhibited more general distress. The horizontal position could not be borne, the limbs could now be tossed about without the slightest pain, the heat, redness, and swelling had disappeared from the joints; there was, however, neither mitigation of pain, nor of tenderness on pressure of the abdominal muscles, nor relief from the deep distressing anxiety and pain of the heart, to which the little patient usually pointed when asked about her sufferings. The breathing was hurried and distressed; not simply as in ordinary fever, but there was a corresponding anxiety of countenance; and she continually maintained the sitting posture, the head inclined forwards, and required support of the hand of her attendant, such was the debility. She had, at this period, some cough, and expectorated with difficulty a viscid mucus. She died on the 18th day of her illness, having preserved her mental faculties in a perfect state throughout. The same remedies were used as in the former attack.

"*Dissection.*—The body was remarkably pale, and had rather a bloated appearance. The abdomen, particularly examined, exhibited no trace of inflammation. The lungs were perfectly healthy; but the pericardium was much enlarged, and evidently distended by a fluid. On opening this bag, a quantity of sero-purulent fluid, with flakes of lymph floating in it, poured out. The surface of the heart and corresponding part of the pericardium were coated with lymph, and presented the usual appearances of acute pericarditis."—*Dub. Hosp. Reports, Vol. IV.*

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23. *Case in which Inflammation was propagated from the Surface to the Heart.* By Robert Adams, Esq.—The external lamina of the pericardium being a fibrous membrane, does not readily take on inflammatory action, and therefore acts as a barrier to the extension of inflammation to its internal or serous lamina from the pleura. Nevertheless a combination of the pericarditis and pleuritis does occur, and Mr. Adams has seen inflammation disregarding all difference of structure, pass from the surface to the heart. He has seen a well marked example of this in the case of a man who received an external injury of the chest: to the ordinary consequences of the primary injury succeeded the acute symptoms of pericarditis, which terminated in death. On dissection were exhibited the effects of inflammation of the different textures from the skin to the serous membrane of the heart, which was extensively coated with lymph; the pleura and neighbouring portion of the left lung had been also implicated.—*Dublin Hospital Reports, Vol. IV.*

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24. *Chorea.*—M. Lisfranc presented to the Royal Academy of Medicine at their sitting of the 16th of August last, a lady whom he had cured of chorea by general bleedings, and repeated application of leeches to the upper part of the spine: he had been induced to try this mode of treatment, because M. Serres had assured him that he almost always found the tubercula quadrigemina in a state of inflammation in the bodies of those persons who died of chorea. M. Serres, who was present, stated that in four cases of chorea he found the tubercula quadrigemina altered; in one case a fatty tumour was developed on them: in another, there were marks of considerable excitement, with bloody effusion at the base of these bodies. In the two last cases, the whole substance of the corpora quadrigemina was inflamed, and the inflammation extended to the roof of the fourth venticle. The symptoms appeared to him to have some

relation with an injury of this part of the brain. M. Serres tried experiments on living animals, and found that those animals in which this part of the brain was injured, had motions similar to those observed in cases of chorea. M. Rolando had also perceived this fact in his experiments. M. Serres was not, however, willing to conclude that in every case of chorea the tubercula quadrigemina are injured: he had seen several in which no injury in the brain could be discovered. As persons afflicted with this disease generally experience great pain at the back part of the head, above the region of the neck; he had been induced to apply remedies to this spot, and which had often cured the complaint in its acute state; but when it becomes chronic, the frequent application of leeches, in the neighbourhood of the supposed seat of the disease, prove of no benefit.—*Archives Générales de Médecine, Sept.* 1827.

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25. *Rupture of the Heart.*—The muscular substance of the heart, constituting the whole thickness of the ventricles, sometimes gives way at a particular place, and death usually follows instantaneously. The rupture, we believe, always occurs in one of the ventricles, and most commonly in the left, we do not recollect having met with any case recorded in which the auricles were ruptured. Mr. Adams records in the fourth volume of the *Dublin Hospital Reports*, a case, communicated to him by Mr. Colles, of a gentleman who had marked apoplectic symptoms, for which he was bled, and had an issue inserted in his arm; about a week afterwards, while in the water closet, he suddenly fell down dead. On dissection, the contents of the cranium were found sound; the pericardium was distended with blood, the whole surface of the heart was coated with fat; on the anterior and upper part of the left ventricle there was a large bloody spot, immediately beneath which there was a laceration of the left ventricle, through which a large bougie could be readily passed; through this the blood had escaped, which accounted for the sudden death of the gentleman: the substance of the organ was soft and flabby; there was no disease of the valves or vessels.

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26. *Case of Active Enlargement of the Heart with Rupture of the Cordæ Tendineæ of the Mitral Valve.*—The cordæ tendineæ, which connect the auriculo-ventricular valves to the walls of the ventricles, are sometimes torn, and the accident is soon followed by a train of the most distressing symptoms. The following interesting case is related by Mr. Adams in the fourth volume of the *Dublin Hospital Reports*. The case was communicated to him by Dr. Cheyne.

"In the beginning of September, a musician, 34 years of age, of a very robust frame, sanguine temperament, and corpulent habit, being at Limerick, where he belonged to the orchestra, and leading a life of irregularity and intemperance, exposed to heats and colds, was seized with a most acute pain in the left side of the thorax, precisely in the region of the heart; at one time it was so acute as to render him nearly frantic; five or six persons could scarcely hold him down in bed; he had a dry cough, his breathing was oppressed, from which oppression he had most relief when leaning forward inclined to the left side, in which position he usually sat. He recovered partially and went to Cork, the pain continuing in a degree, with some *stuffing*, as he called it, and cough; towards the end of September, he went to Cove with the intention of returning by sea to Dublin. He there lived on board a coasting vessel for a fortnight waiting in vain for a favourable wind, much exposed to cold, and daily becoming worse; at last, impatient of the delay, he walked back to Cork to return in the mail, and it was after this walk that he first observed an œdematous swelling of his ancles, which gradually extended to his thighs.

On the 12th of October, 1813, this poor man had been free from pain for several days. The stroke of the heart was indistinct, tremulous, and appeared to extend over the whole of the left side of the chest, from above the clavicle to below the scrobiculus cordis; at no one part between these points was the stroke more distinct than at another. His pulse was 148, unequal, irregular,

and indistinct; his complexion was of a leaden colour, his countenance bloated, his eye staring and wild. His recollection was becoming indistinct; unable to lie down, he passed the night in his chair. His appetite was not much impaired, but he was flatulent and costive; his tongue was furred, its edges were livid. His urine was scanty, high-coloured and lateritious.

"A walk of not more than a few hundred yards wonderfully added to the disturbance of the vital functions. While such an exertion increased the dyspnœa, it gave strength and distinctness to the stroke of the artery. His abdomen was swelled, and evidently contained a fluid. He died without a struggle on the night of the 15th of October.

"The following were the appearances on the dissection, which the surgeon-general, who had humanely visited this man, permitted me to attend. On cutting through the cartilages of the ribs, the fluid, which was in immense quantity, spouted up to some height—in the right cavity of the thorax there were several quarts of fluid. There were no adhesions between the pleuræ, the lungs were sound. The pericardium contained a considerable quantity of fluid. The heart was so large that it resembled the heart of a bullock, the parietes of the left ventricle were thickened, its internal surface much inflamed, various irregular excrescences grew from the mitral valves and semilunar valves of the aorta, and the cordæ tendineæ, which connect the larger portion of the mitral valve to the walls of the left ventricle, were torn off just at the point of their insertion into the edge of the valve; at this point there were also some of the above-mentioned excrescences; four of the broken cordæ tendinæ hung loose into the ventricle.

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27. *On the distinction between Rheumatic Inflammation of the Heart and Inflammation of the Serous Membrane of the Pericardium.* By Robert Adams, Esq.—The distinction between rheumatism of the heart and of its serous membrane, has not been sufficiently insisted upon, and as it is a matter of consequence in practice to be able to distinguish them, we copy from Mr. Adams' excellent paper on the diseases of the heart, in the fourth volume of the *Dublin Hospital Reports*, the diagnostic characters of these two affections, which he has laid down with great accuracy and precision.

"In the one case the organ is simply, and often but transiently affected, just as any other muscle is, the person has perhaps been affected with rheumatic pains in the loins, with but little fever; these suddenly leaving this region run to the diaphragm, and cause a temporary affection of the breathing, with what the patient calls spasms in the chest. The countenance undergoes sudden changes: there are at such moments strong beats of the heart, and intermissions of the pulse sensible to the patient; and in females I have sometimes seen such attacks end in an hysteric paroxysm, and all symptoms subside when the lumbar pains returned. In such cases, the tongue is somewhat foul, the skin is frequently relaxed by profuse perspiration, and the urine is remarkably turbid; but the pulse has neither the frequency, hardness, nor peculiar vibratory feel that it has in the other, and more dangerous case: the countenance does not betray that anxiety, or, as it is denominated by some authors, that anguish which it almost uniformly expresses when the membranes of the heart are affected with acute inflammation, from whatsoever cause proceeding. Although simple rheumatism of the muscular structure of the heart may occasionally pass on to carditis, or to an inflammatory affection of the serous membrane of the heart, there cannot be a doubt that the two cases are very distinct from each other, and require treatment so different as to make it highly important for the practitioner to be aware of the risk of mistaking the comparatively simple case of rheumatism of the heart, for the far more urgent and dangerous one of rheumatic inflammation of its serous membrane. The latter disease I have usually seen in children, and persons about, and under the age of puberty, in whom, metastasis seems much more liable to occur, than in those more advanced in life; and the sudden translation of the rheumatic inflammation to the

heart has usually occurred where the synovial system of the extremities was the original seat of the disease: when the muscles have been affected with acute rheumatism, metastasis to the heart has not, to my knowledge, been frequent, although I have seen the diaphragm affected by it in such a manner as to excite apprehensions for a time, that the former more important organ was implicated. There seems to be a greater disposition in the acute inflammation to pass from the synovial membranes to the serous, than to any other tissues; which is not so much to be wondered at, when their great similarity of structure, appearances, and functions, is considered.

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28. *Asphyxia as a cause of Death in Small-Pox.*—Dr. Rennes, physician to the military hospital of Strasbourg, is of opinion, that in most patients who fall victims to this disease from the tenth to the fifteenth day, perish from asphyxia rather than inflammation of the respiratory organs. To corroborate his assertion, Dr. R. details the results of four cases of confluent small-pox, in which there was found on dissection that the nostrils, pharynx, and sometimes the larynx and trachea, were covered with thick layers of a tenacious mucus—to this morbid alteration were also joined all those which generally accompany asphyxia.—*Journal des Progrès, Vol. V.*

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29. *Fracture of the Sternum by Muscular Action.*—M. Chaussier reported to the Royal Academy of Sciences, a case of transverse fracture of the sternum in a woman aged twenty-five years; produced during labour, by the simultaneous contraction of the sterno-pubic and sterno-mastoid muscles. The patient died at the end of fifteen days. M. C. has seen but two similar cases during the twenty years that he has been physician to the Maternité.—*Journal des Progrès, Vol. IV.*

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30. *On the Accidental Heterologue Tissues.* By Aug. Boulland, D. M. P.—The accidental tissues, or those which differ in their organization from that of the primitive structures, have been divided into two sections. 1st. Those which have analogues among the natural tissues; and 2d. Those which have no analogues, and which never exist but as a consequence of a morbid state. Dr. Boulland has published in the fourth volume of the *Journal des Progrès*, an interesting monograph of the accidental heterologue tissues, as they have been called, viz. tubercles, schirrous and carcinoma, melanosis, and cirrhose.

After detailing all that is known in relation to them, he concludes that in the present state of our science, the generic name of accidental heterologue tissues should not be used, unless we wish to perpetuate discussions and countenance the false ideas which result from its employment. In fact, some of these alterations, he says, consist of a truly new formation, but which do not exhibit any of the characters of an organic tissue, as the substance of tubercles, and of melanosis; others also present an unorganized newly-formed matter, but so intermingled with natural tissues, whose nutrition has been modified, that the term new tissues would infallibly lead to error, such are schirrous and carcinoma; lastly cirrhose is but a modification of nutrition in the normal organic elements, without any accidental formation.

If however we wish to preserve the term *heterologue morbid productions*, M. B. thinks that we can comprehend under this title only tuberculous matter, the matter of carcinoma, (encéphaloide of Laennec,) and the non-organized matter of schirrous, observing that there is not comprehended by these two last the whole of cancerous tumours, the organized portions of which are not a new production. Melanosis must be withdrawn from this class, as it has an analogue in the normal pigmentum nigrum, and must be united to a class of *morbid productions with analogues*. On the other hand, M. B. is of opinion that we must reunite to the heterologue productions, pus and its varieties, the matters similar to fat, to starch, and to honey, &c. stony concretions, false membranes, and hydatids.

As to the mode of production of these different alterations, they consist, ac-

cording to M. B. always in alterations of nutrition or secretion, which produce them separately or simultaneously. In some cases it must be admitted that these derangements of functions are the result of inflammations, in others we can only observe fluxion, or active sanguineous congestion; finally, in some we are obliged to admit different obscure hypotheses, all more or less probable, but which wait their confirmation from time and experience. Numerous researches are still required to place our knowledge of these tissues on a permanent and solid foundation.—*Ibid.*

MATERIA MEDICA.

31. *Proto-Nitrate of Mercury.*—Dr. Sundelin of Berlin, considering the inconveniences attending the use of the deuto-nitrate of mercury, owing to the caustic form of the deutoxide, prepares a nitrate of mercury in the following manner; it contains the protoxide only. Take of pure metallic mercury, pure nitric acid, simple distilled water, of each one ounce; let them be placed in a cold situation, in an uncovered glass vessel, until crystals are formed; wash the crystals in distilled water, and keep them in a glass vessel well covered. Dr. S. at first gives one-sixteenth to one-eighth of a grain of this salt, and increases the dose according to circumstances, to a grain twice a day; he prefers it in the form of pills, which he makes in the following manner. Take six grains of the crystallized nitro-oxide of mercury, dissolve them in a little water; add to the distilled solution liquorice powder and mallow root, of each one drachm; let the mass be made into ninety pills. Two pills are to be given every day, and the number gradually increased to sixteen. "The intestinal canal bears this form much better than the sublimate, and it may be conveniently given to very irritable patients. It takes, however, a greater length of time to produce salivation. It favours the secretion of urine much more than that from the skin. It is very beneficial in secondary ulcers of the palate, exanthematous eruptions, and ulcerations of the skin produced by syphilis, diseases of the periosteum and the bones. The treatment must be accompanied by a spare diet, mild baths, mild temperature, and the use of the decoction of sarsaparilla."

32. *On the Medicinal Properties of Madar.* By Wm. Cumin, M. D.—Madar has been long used by the natives of Hindostan, in elephantiasis and other cutaneous diseases. It is of a whitish colour when in powder; its odour is faint, and somewhat resembles opium, and its taste approaches to that of the common horse-bean. Mr. Cumin has administered it to five patients in the Lock Hospital, in the form of powder, in the dose of from three to five grains two or three times a day. In all the cases it produced nausea, and sometimes vomiting; and these symptoms occurred in some instances very soon after the powder was swallowed, but more generally not till after an interval of an hour or more. In the five cases in which Mr. C. used the madar, in two it produced no benefit, in two it seemed to contribute to a successful result, and in one he is inclined to ascribe to it the completion of the cure. Mr. C. considers it to be an alterative of a highly concentrated character.—*Ed. Med. and Surg. Journ. October,* 1827.

33. *On the Bichromate of Potass.* By Wm. Cumin, M. D.—"The first effect of the habitual application of the solution of bichromate to the skin is to produce an eruption of papulæ. These, after a little time, become pustular, and, at length, provided the exposure be continued, deep sloughs form under the pustules. The sloughs are of a peculiarly penetrating character; an instance has even occurred in which a complete perforation through the muscular substance of the hand has in this way been produced. Great differences exist among the individuals subjected to the action of the solution; some suffering

very slightly, others severely, so much so, indeed, that swelling of the face and inflammation of the eyes have, I am assured, been produced in addition to the symptoms above described. To avoid the injurious consequences of immersing the hands and arms in the solution of bichromate, an apparatus has been constructed, by which the cloth is passed through the liquid dye, without requiring more than the tips of the fingers to be dipped into it. Even this slight exposure, and the handling of the moist cloth after it has been thrown off from the machine, cause the eruption to make its appearance in susceptible individuals; and it would no doubt proceed on through its several stages, were they not relieved for a time from the duty. Other liquids used in dying and calico printing produce irritating and injurious effects; thus the solution of chloride of lime causes softening, and sometimes destruction of the nails with excoriation, but nothing resembling the effects of bichromate of potass, the action of which appears to be altogether peculiar.

"Soon after I succeeded Dr. Brown in the charge of the Lock Hospital, I began to prescribe a saturated solution of bichromate of potass, as an application to tubercular elevations, excrescences, and warts. In these cases, the new growth has sometimes been removed by absorption without any slough; but where a slough has formed, it has always served to expedite the cure, and in no instance have I observed it to be followed by a deep or unmanageable ulceration. In a case of warts, more extensive and formidable than any I had before met with, or seen delineated, which I treated last winter, the solution of bichromate was the only remedy which acted effectually, without causing such intolerable pain as to preclude the continuance of its application.

"The bichromate of potass, although decidedly poisonous; does not appear to be very active in its operation. It inflames the stomach, both when introduced into that organ, and when injected in a considerable dose into the veins. Under these circumstances it would require some degree of medical hardihood to venture on its employment as an internal remedy; but it is probable, that, if cautiously used, it may be found, like arsenic, to possess considerable tonic virtues."—*Ibid.*

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34. *Styptics.*—Sir Astley Cooper says "in bleeding from small vessels on wounded surfaces, very fine wool laid down and confined by bandage upon the part is one of the best styptics. The wool may be dipped in flour to add to its efficacy.

"There is an old prescription of a styptic in St. Thomas's Hospital, which I have seen useful. ℞. Pulv. catechu—pulv. bol. armen. āā ℥ij.—alum. ust ℥j.—tinct. opii. q. s. at fiat pasta.

"This will stop the troublesome bleeding from leech-bites."—*Lectures on Surgery, Vol. III.*

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35. *Application of Medicines by the Skin.*—"Dr. Martin, Jun. has been lately occupied in experimenting on what the French call 'la méthode endermique' of exhibiting medicines; and in the number of the *Revue Medicale* for September, he has published a memoir on the exhibition of the sulphate of quinine by the skin in intermittent fevers. He gives six cases in which the remedy was thus administered, in all of which, (except one, in which it was found necessary to give the medicine internally,) it proved successful. Dr. M. considers the question of the absorbing powers of the skin as set at rest by the experiments of Bichat, Pinel, Chaussier, Alibert, and Dumeril. But allowing a doubt to exist as to the power of absorbing where substances are simply applied to the skin, it does not apply here, as in this method the epidermis is previously removed by a blister. 'The skin deprived of its epidermis,' says Dr. Martin, 'possesses a power of absorbing so great, and so manifest, that it admits not of doubt. Who does not know the terrible effects of rabies, and the venom of serpents thus introduced into the body? Dr. Lesieurs is the first who proposed this function of the skin as a new method of giving medicines;

and wished to assure myself of the results of a method which appeared likely to be so useful.' The method he uses will be best shown by transcribing one of his cases.

"Claire Bels, ætat thirty-four, was seized in the beginning of September, 1826, with remittent fever, which was stopped in a month by means of the sulphate of quina, given internally. Fifteen days after, a quotidian intermittent showed itself. The fever, which at first was slight, becoming severe, she entered the Hôtel Dieu, December 18th, with the following symptoms:—Face flushed, heat of skin, slight moisture; pulse strong, bounding, and frequent; tongue red and dry; frequent cough; pain in the chest, increased on coughing; slight head-ache; the other functions natural. She was bled to eight ounces, and ordered pectoral medicine, with low diet.

19th. A return of fever. A blister was applied to the arm.

20th. Perfectly calm. The blister rose well. Six grains of sulphate of quina in powder was sprinkled on the blister, and the wound covered with beet-leaves. At noon the paroxysm came on as before. Blister very painful.

21st.—Great pain in the arm, which is swollen and red. Six grains more of the quina were put on the wound. No fever to-day.—In the evening, great pain from the wound, to which a poultice of linseed-meal was applied.

22d.—A bad night; much suffering; no fever during the day. Continue the cataplasm.

"23d.—A quiet night; scarcely any pain, and no stiffness of the arms. No return of fever.

"24th.—The patient is doing well. Slight pain from the blistered part; good suppuration. No return of fever.

"26th.—The wound is nearly healed; scarcely any pain; no fever.

"31st.—The patient has quite recovered, and has been dismissed cured.

"Dr. M. soon observed that, by mixing the quina with the cerate with which the blister was dressed, the violent effects of the salt on the wound were moderated, and its absorption not at all retarded.

"In enumerating the advantages of this mode of administering the quina, Dr. M. remarks that patients who cannot or will not take the quantity of medicine necessary for their cure, may in this way be brought under its influence, without their being aware of it. In children, also, where it is sometimes nearly impossible to give medicine internally, this mode may be advantageous. In some cases of intermittent fever, where congestions or inflammation of the stomach or intestines prevent the internal exhibition of quina, this new method would answer. Sometimes also the medicine runs off immediately by the bowels, and in this way the first doses are entirely lost: this is avoided in giving it through the medium of the skin. Another advantage pointed out is, that there is no occasion to wait for the remission of the paroxysm, but it may be applied at any period of the fever. It appears also that, by being carried into the blood without alteration much smaller doses of it will stop the course of the disease than when given by the stomach. The quantity of the sulphate necessary to stop the fever, when taken internally, is from six to twelve grains; when applied to the skin, about four grains will suffice in mild cases.

"The only objection to this plan appears to be, that a blister becomes necessary.

"Dr. M. draws the following conclusions:—1st. That the sulphate of quina, applied to the dermis, denuded by means of a blister, stops the progress of intermittent fever, when nothing is opposed to its absorption.

"2d. This salt operates in these diseases by a general and specific, and not by revulsive or any local action.

"3d. The absorption is very rapid.

"4th. The salt thus absorbed suffices in smaller doses than when given by the stomach.

"5th. The sulphate applied to the skin in powder causes great inflammation.

"6th. The sulphate mixed with cerate causes scarcely any pain or inflammation.

"7th. This medicine, valuable for administering the quina to certain patients in simple intermittents, may become a great resource in certain cases of dangerous and obstinate fevers."—*Lond Med. and Phys. Journ. November*, 1827.

36. *Sulphate of Quinine.*—M. Bland, Physician to the Hospital of Beaucaire, observed in an epidemic intermittent fever which prevailed in the summer of 1825, that the sulphate of quinine when given to the extent of twenty-four grains a day, produced on the second or third day, in many individuals, a considerable degree of deafness. He observed this most frequently in tertians in individuals who were slender and of a nervous temperament. This symptom was attended with head-ache, it disappeared spontaneously on the eighth or twelfth day.—*Journal des Progeès, Vol. V.*

PRACTICE OF MEDICINE.

37. *Cases of Inflammation of the Tongue.*—In the Periscope of our last number, we gave two cases of this rare and alarming disease; the following cases will be considered a useful addition to our knowledge of the affection, and are especially interesting as they yielded to milder treatment than was employed in those previously noticed. *Case I.*—"A stout man, aged 68 years, by trade a mason, was attacked with pain in the throat, redness of the fauces, and swelling of the tonsils, but without much fever. These symptoms were considerably diminished by leeches applied to the angles of the jaws, emollient gargles, and a mustard pediluvium. But in consequence of exposure to cold he was soon afterwards seized during the night with a tormenting sense of tightness at the root of the tongue, difficulty in speaking and swallowing, and ere long with swelling in the tongue and impending suffocation. When his physician saw him in the morning he could not speak, the pulse was very quick and feeble, the countenance pale and anxious, and the tongue filled the whole cavity of the mouth. On account of the firmness with which the tongue was pressed against the roof of the mouth, and the patient's inability to separate the jaws to half the usual distance, it was found impossible to make on its upper surface more than two short incisions, from which very little blood flowed. An incision was therefore made with the lancet into each sublingual vein; and when the blood ceased to flow, fresh incisions were made, and the discharge promoted by injecting warm water into the mouth. In the course of two hours the swelling was so much diminished that the man was able to rinse the mouth with warm milk, after which a blister was applied to the neck, and a purgative enema administered. A rapid amendment then took place, so that before the close of the day he could speak intelligibly; and his recovery went on steadily. *Case II.*—Another case was of a less acute form than the former. It had existed eight days before it came under treatment. The patient had little pain or fever, but swallowed with great difficulty, and could breathe only in the upright posture. The case was cured by blisters, gargles, and the mustard pediluvium. —*Horn's Archiv. für Medizinische Erfahrung.*

38. *Employment of Iodine in the Treatment of Cynanche Parotidæa.* By Dr. Neumann.—"Dr. Neumann, of Neustadtel in Silesia, has employed the hydriodate of potass with great success as an external application in cynanche parotidœa, which prevailed epidemically in Neustadtel in June, 1823. Among the poorer orders who were treated in the ordinary way, the disease was very tedious, and generally ended in suppuration. Among the better ranks, the treatment consisted in the exhibition of an emetic, and the application over the tumour of a plaster composed of eight parts of mercurial ointment and one part

of the hydriodate of potass; and the ordinary effect was a radical cure within three or four days. Dr. Neumann adds, that he never observed in the cases so treated any metastasis to other organs; and he is disposed to impute this to the formation of an erythematic eruption, which always appeared on the first or second day, and remained from eight to twelve days.—The author has annexed a very instructive case illustrating the deleterious effects of this drug when given in too great quantity. It was given to cure enlargement of the cervical glands, which it accomplished very effectually; but the patient was at the same time attacked with violent palpitation in the chest and abdomen, which was relieved only by the horizontal posture, then with great weakness, and tendency to faint, and subsequently with emaciation and general dropsy. The palpitation was so violent and constant as at first to appear connected with organic derangement; but the relief obtained from the horizontal posture, the absence of cough and dyspnœa before the dropsy commenced, and the regularity of the pulse, led Dr. Neumann to conceive that the disorder of the heart was merely functional. Accordingly, although the patient had been ill for a twelvemonth, the irregularity of the heart's action was soon subdued by the employment of digitalis and cherry-laurel-water; and the tendency to faint and anxiety at the same time disappeared. The dropsy, however, continued much longer; but at length it slowly receded under the use of the *Arnica* combined with soap."—*Rust's Magazin für die Gesammte Heilkunde*, 1826.

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39. *Case of Cancer of the Breast cured by Antiphlogistic Treatment.* By Prosper Gassaud.—"Madame Dillon, residing at Toulouse, aged 49, of a sanguineo-nervous temperament, the mother of several children, had enjoyed good health up to her forty-seventh year. She then began to be the subject of retarded menstruation, and to be much affected with pains in the abdomen. In pursuance of the advice of her physicians, she took several purgative draughts, which procured her some relief, without, however, restoring her health, which still continued in a tottering state. In the month of October, 1821, after having given herself a slight blow on the left breast, she perceived a tumour there, about the size of a nut. At first this excited but little attention; but as it gradually increased, and in time began to be painful, she sought the opinion of a surgeon, who recommended a resolving plaster to be applied to the part, and made her take daily a *white* powder.

"During a whole year the patient derived no benefit; on the contrary, the pains increased; sleep entirely left her, the tumour made rapid progress, and at length an abscess was formed towards the depending part.

"Being at this epoch physician to the medical charity of the district in which this poor woman resided, I saw her, for the first time, on the 6th October, 1822, and found her in the following state: rather unusually thin; her face pale; contracted, and expressive of suffering; skin hot, and unusually so towards evening; hard and frequent pulse; habitual and obstinate constipation; the left breast the seat of three unequal and agglomerated tumours, the largest resembling a hen's egg, which was at the same time in a state of ulceration. The skin in the neighbourhood of the local affection was corrugated, and the folds were of a brownish hue; the edges of the ulceration hard, unequal, swollen and highly sensible; the patient declaring that the sensation was that of red hot coals. The bottom of the sore was full of fleshy, dull white granulations, and discharged a fœtid, acrid, serous, and bloody fluid. Digestion was difficult; sleep a stranger; nutrition imperfect; and the mind greatly depressed.

"My first attempt was to inspire my interesting patient with confidence, from the hope afforded of relief by means of the new doctrine, and the cures that had already been effected, in several similar cases, at Paris. She promised implicitly to follow my advice.

"The first day, I dismissed the nutritive food and generous wine, which she had been using in order to keep up her strength, confining her to a milk and vegetable diet, and restricting her, in point of drink, to mucilaginous and sim-

ply sweetened water. Thirty leeches were applied in the evening, as near the seat of the evil as was practicable; upon their removal, not only their punctures, but the whole ulcerated surface was covered with a linseed-meal poultice, moistened with a decoction of leaves of nightshade and poppy-heads.

"On the morrow there was a little amendment, although she felt herself very weak: the leeches had bled well, and I ordered this depletion to be repeated three times in the course of twenty-four hours. The patient had some repose, and the sore put on a better aspect. In four days more the leeches were repeated, to the amount of twenty, but less blood was obtained; and this time the patient was not so much weakened, while the pain was lessened.

"By the 12th, the stomach, which had been over-excited by the wine and previous regimen, began to be in a better state; the tongue had nearly regained its natural aspect, being more moist and less red. Hope likewise seemed to be playing a useful part; the countenance began to brighten, the spirits mounted, and she declared that she had enjoyed two hours tranquil sleep during the preceding night—a thing to which she had been a stranger during six months. *Contin. regimen et cataplasmata.*

"18th. The ulcer presents an entirely new aspect; its edges are less hard and more united; the veins surrounding the body of the mamma are diminished; the bottom of the sore has assumed a healthier colour; the discharge is less bloody and of better consistence; *fifteen leeches bled well*, and, according to the patient's account, entirely removed the pain.

"24th. The ulcer contracts; the edges are subsiding, and present a vermilion hue: I now commenced the application all round of strips of fine linen, smeared with recently made *opiated* cerate; while, at the same time, the whole tumour was covered with the application already mentioned.

"30th. A remarkable improvement; the glands in the neigbourhood of the ulceration, which were of unusual sensibility, have lost about a third of their bulk, and give little or no uneasiness to the patient. Twelve leeches were this day applied; but in other respects there was no alteration of treatment. The first days of November being cold, I advised Mad. Dillon to keep herself warm, and on no account to expose herself to damp. The digestive organs being in a favourable state, I judged it proper to try *revulsion*. Accordingly, two of the following pills were ordered every morning:—℞. Saponis ʒj.; aloës hydrarg. submur. (calomel,) āā. ʒss.; syrupi rhamni, q. s. ad faciendum pil. no. lxij.

"Every ten days a small number of leeches was applied, and after every application of this nature the state of the breast was manifestly improved. The appetite improved so much as to prompt the patient to solicit for indulgence in the article of diet, and she was allowed a small portion of fish.

"Towards the close of November the pain was entirely gone; respiration, which had been hitherto oppressed, became free; instead of a foul ulcer, the mamma exhibited a healthy sore, approaching rapidly to cicatrization; the neigbouring tumours subsided, and scarcely equalled a pea in point of size. The temper of the patient, from being morose and unsteady, became remarkably cheerful; her physiognomy indicated the entire removal of suffering; the nutrient and locomotive functions were executed with ease; and, in short, the general state of affairs was good.

"About the beginning of November, the purgative plan having excited some slight cholic, I suspended its operation *pro tempore*.

"12th. Fifteen leeches; and on the 13th the pills resumed, in smaller doses. During the month the wound was regularly dressed, and cataplasms were daily applied.

"January 1st, 1823. One entire and undisturbed night's rest; functions entirely natural; ulcer ready to heal up; mammary glands, at first so large, diminished to almost their natural state; *cataplasms discontinued; dressings with saturnine cerate; more animal food; wine and water*. The patient returns to her domestic occupations. At the end of the month the ulcer was entirely healed,

and from that time I look upon it that Mad. Dillon was the subject of a radical cure.

"From this period more than four years have elapsed, and nothing whatever has occurred to disturb my patient's health."—*Nouv. Bibl. Méd. June*, 1827.

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40. *Phagedenic Ulceration of the Gums in Children.*—"We have received the following note from Mr. Bush, of Frome.

"In the Journal for June, Mr. Thomson has given a paper on a species of phagedenic ulceration of the mouth, called 'Gangrenous Excoriation, or Erosion,' in which he recommends, and perhaps with much propriety, the Balsam of Peru. The disease is well known to practitioners, especially those resident in crowded manufacturing towns, as attacking the children of the lower orders, and more particularly such as are deficiently supplied with nutritious food, and have not the advantages of well-ventilated rooms, regular personal ablution, and frequent changes of clean linen. I have seen this disease to supervene on typhus, scarlatina, rubeola and variola, and at all periods from one to ten years. It takes place in children of delicate constitutions, such as are of scrofulous diathesis. Having witnessed a great deal of difficulty in curing these cases by bark, wine, and the ordinary routine of practice, I was induced (some ten or fourteen years ago,) to give the carbon, and with the most happy results. Indeed, where the plan has been tried early, I do not remember an unsuccessful instance. The following is the formula I have commonly used; but, when the bowels have been too relaxed, I have formed the linctus with syrup. pap. alb.—℞. Carbonis ligni, mellis, āā. ℥j. M. sumatur cochleare minimum sæpe, vel quartâ quâque horâ. This serves as a local and constitutional remedy. I have used it very extensively in cases of ill-conditioned ulcers, accompanied by constitutional debility, both internally and as a local application, with marked advantage.

"It is worthy of observation, that animal and vegetable oils, sugar, gum, starch, and other substances found to contain great quantities of carbon, are those which by experience are found to recruit and restore most efficiently debilitated constitutions."—*Lond. Med. and Phys. Journ. October*, 1827.

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41. *Treatment of Acute Rheumatism by Tight Bandaging.*—M. Velpeau, some time ago published an account of his treatment of the several varieties of diffuse cellular inflammation by graduated pressure, applied by means of the roller bandage. Dr. Varlez surgeon in chief of the military hospital of Brussels, has treated acute rheumatism of the joints with great success, by the same application. He relates in the *Archives Générale de Médecine*, for June, 1827, several cases "in which the bandage was applied in the acutest form and stage of the disease, when the redness and swelling were great, the throbbing pain violent, and the general fever high, and in which the treatment was crowned with speedy and complete success. In almost every instance the application of the bandage is followed at first, and for two or three hours, with increase of the pain, so that the patient can with difficulty be persuaded to persevere; but soon afterwards the pain begins to abate, and the abatement then advances with rapidity. Dr. Varlez generally moistened the bandages with an emollient decoction, which, besides having the ordinary effect of emollients, were useful by increasing the pressure."

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42. *Prussiate of Iron in Epilepsy.*—The Chevalier Kirkhoff, of Antwerp, has employed for a long time with success, the prussiate of iron in the treatment of epilepsy, when it does not depend upon organic lesion. He administers the remedy, at the commencement, in very small doses, beginning with half a grain a day for an adult, and gradually augmenting it to three, four, five, or six grains, and often more. When the patient is of a sanguineous constitution, the use of this remedy is preceded by a large bleeding, and is accompanied by the application of some leeches to the temples, repeated from time to

time. M. K. recommends also the following regimen; considerable exercise, but without inducing fatigue; to avoid exposure to vicissitudes of temperature, dampness, or great heat; to shun every thing that can produce strong impressions upon the nervous system, as venereal pleasures, strong emotions, as well agreeable as disagreeble. When the patient has a feeble constitution, he puts him upon a light, nutritive, and easily digestible diet, preferring animal food, as veal broth, poultry, milk, eggs, &c. He recommends the farinacea also as accessory articles of diet. Coffee, tea, liquors, finally every thing that can over-excite is forbidden. It is necessary that the patient should eat little at a time and often, in order to avoid producing an irritation of the stomach, which might react upon the brain, the principal seat of epilepsy. As it is necessary to pay the greatest attention to prevent all irritation of the brain, both direct and indirect, it is also necessary to keep the bowels open by enemata. But when the patient is very robust, and of a sanguineous constitution, M. K. prescribes a strict antiphlogistic diet and vegetable food.—*Journal des Progrès, Vol. IV.*

43. *Chloride of Soda in Tetter.*—M. Lisfranc has lately used, with success, in cases of obstinate tetters, a lotion composed of a solution of the chloride of soda. He first subdues the symptoms of inflammation and then uses the lotion.

44. *Muriate of Iron in Softening of the Stomach.*—"In the Heidelberg Klin. Annalen, Dr. de Pommer has related some cases of supposed softening of the stomach in infants, a disease to which the attention of the profession has recently been called, (see the paper of Dr. Gairdner in the Medico-Chirurgical Transactions of Edinburgh, &c.) in which he administered the muriate of iron with apparent advantage. We say supposed cases, because the actual condition of the stomach in cases terminating favourably must remain matter of conjecture, and all that we can venture to affirm is, that the symptoms of the children who survived were very similar to those in the children who perished, and in whom the coats of the stomach were found softened. In the cases which did well under the muriate of iron, there was constant vomiting, with frequent, loose, fetid stools; moaning, and anxiety of countenance; but no tension of the abdomen, or tenderness on pressure. The following is the prescription recommended:—℞. Rad. Alth. ℥ij.; Coq. c. aq. fontan. q. s.; Colal. ℥ij.; adde Pulv. Gum. Arab. ℥ij.; Ferri Muriat. ℈jss.; Syrup. Alth. ℥vj. M. S. Of this two tea-spoonfuls are given every hour, care being taken to shake the mixture each time."—*Lond. Med. and Phys. Journ. Nov.* 1827.

45. *Case of Dysentery cured by Ipecacuanha.* By R. Bright, M. D.—"J. C. æt. 60, was admitted, under my care, into Guy's Hospital, January 25th, 1827, having for the last three or four weeks had frequent dejections containing blood and mucus, and passed with much pain. Habeat pulv. Ipecac. gr. j. sexta quaque hora.

26*th.* Five stools with griping and tenesmus; chiefly greenish mucus, mixed with blood. Repetatur Ipecac.

27*th.* Passed a better night than he has experienced for a month; disturbed but twice in the night, and experienced much less pain. Hab. Ipecac. gr. ij. s. q. h.

28*th.* But two stools since yesterday morning, with less blood. Rep. Ipecac.

30*th.* Only one or two stools in twenty-four hours; no griping or tenesmus.

Feb. 4th. Going on well. In a few days after, without any change of medicine, dismissed cured."—*Bright's Reports.*

[We employed the ipecacuanha in dysentery very extensively, when physician to the Philadelphia and Southern dispensaries, and were much pleased with its effects. We prescribed it, usually, suspended in mucilage of gum arabic, and with a few drops of laudanum. It is particularly useful in chronic cases, but is also serviceable in very mild acute cases, or where the acute inflammation has been subdued by the usual means. With the aid of absolute

diet, and absolute rest, two most important therapeutic agents in this disease, many cases may be cured, which, under the purgative treatment would terminate fatally. We have also derived benefit from the flannel roller, as recommended by Dewar. I. H.]

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46. *On Hydrops ventriculorum cerebri acutus.* By Dr. T. H Kopp, of Hannau, Germany. Communicated for this Journal by Dr. T. Leo-Wolf.—This disease derives its name from the very singular results which proceed from it, namely, the formation of water in the ventricles of the brain; and even should the evil not increase to that extent, but merely that state of the disease which is necessary for the formation of the water occur, it nevertheless retains the same appellation.

The commencement of this disease is rarely cognizable, often escapes our observation, or is supposed to be caused by dentition, worms, or merely by a scrofulous state of the bowels, or else by an intermitting fever. Even should the physician pay attention to that disease, it is sometimes impossible to declare with perfect certainty that the existing symptoms are those of incipient hydrops ventriculorum cerebri acutus, because its premonitory symptoms are in many instances the same as those of various other diseases. In the early stage of this disease, the mode of cure can only be based upon a probability, and a satisfactory prognosis is to be formed from the further course of the disease. If the physician observes its real character only when coma and convulsions have appeared, then all hope of saving the patient is, most generally, extinct. In general, the complete cure of the disease can be effected, solely, in the incipient stages of the complaint; but should the effused water be already exerting a strong pressure upon the brain, and the affection of the sensorium be prevailing, then all expectation of affording relief, is, in most instances, futile.

Among the symptoms of hydrencephalus, I find two characteristical classes, the one is manifested by the *abdomen*, the other by the *brain*. The one appears at first, this I term the *abdominal period;* and the other, from its most striking symptom, the *comatose period*.

I do not mean to assert that the affections of the abdomen, vomiting, constipation, (sometimes diarrhœa,) variation of the urine, collapse of the bowels, tormina, indigestion, irregularity of the appetite, &c. *always* proceed merely secondarily from the reaction of an inflammatory state of the brain. I have attended patients, where those gastric symptoms preceded, without there existing at the same time any symptom of an affection of the brain, viz. head-ache, vertigo, drowsiness, intolerance of light, &c.; these only ensued after the former had lasted for some time. In many cases, however, the affections of the abdomen were immediately or very soon followed by head-ache, shunning the light, drowsiness, &c. But the affections of the abdomen are, in the incipient and lasting state of the disease ever the principal and most prominent symptoms, and in their duration, force, and extent, they are not proportionate to the primary affection of the head. The affections of the abdomen will never fail to be constantly present in the first stage of the disease, and they will not always be merely *sympathetic*, as if they proceeded consensually from the morbid state of the brain; still they will most certainly much more frequently, than has been believed, maintain an idiopathic character. Nevertheless it is peculiar to these affections of the abdomen, that they maintain a connexion with the affection of the brain, but even suppose that the latter in many instances is the cause of the former, still frequently a peculiar morbid state of the abdomen may be succeeded by that affection of the head; however, this subject will require a further and very minute investigation.

A constant symptom in the first stage of hydrencephalus is *vomiting*, and it is attended with this peculiar characteristic; it comes on unexpectedly and suddenly, without being preceded by excessive nausea; the tongue is generally but little furred and the vomiting is more frequent when the patient is supported in a sitting position, than in a lying posture. An *irregular stool*—ge-

nerally costiveness, and rarely diarrhœa—are likewise its attendants. If a child vomits often, at long intervals, if it be costive or its evacuations otherwise irregular, if the abdomen be collapsed and painful to the touch, if those remedies which are commonly employed to remove these affections, viz. Pot. Riverii, extr. colombo, rheum, magnesia, &c. are accompanied with no beneficial result, after being used for a sufficient time; if the urine be dark and *slimy;* if head-ache be observed—in infants by their motions and from their cries; in elder children by their lamentations—if the whole state of the disease maintain a kind of stability and obstinacy; then I most particularly advise an attention to the other symptoms by which the beginning of the hydrops ventriculorum cerebri acutus is accompanied.

I have rarely had an opportunity of witnessing in my patients that *itching* which Formey has described. But the confined and collapsed abdomen, without the evacuations of the intestines being increased, (of which *Goelis* gives notice,) as the symptom of the inflammatory state of the disease, requires, as such, all our attention. I have found, however, that affection more particularly in cases where the effusion of water has already taken place.

If the second stage of the disease be arrived, drowsiness and the other symptoms, which denote pressure upon the basis of the brain, then the diagnosis is very easy, but the cure becomes the more difficult, and at this period is generally hopeless.

In cases of very young children, who are not yet able to talk, in determining the *beginning* of hydrencephalus, we ought principally to rely upon the abdominal symptoms, vomiting, obstruction, &c. for the very important symptom of head-ache, is in these cases extremely difficult to ascertain. The other immediate symptoms of the affection of the brain among patients of a tender age, are in the first period equally indistinct, ambiguous, and uncertain, as well as the increased sensibility of the eyes when exposed to the light, the redness of their conjunctiva, their sleeping with half-opened eyes, the fixing of the position of the head, the putting of the hand to the head, the heat in the forehead, the altered feature, the itching in the nose, &c.

Sometimes in the beginning of hydrencephalic affections, even if they are not recognized as being of that character, the cure may be effected, if *calomel* and bleeding be had recourse to, as in various instances of painful dentition.

Sometimes the duration of drowsiness extends from fourteen to eighteen days. I have at least observed in several children, that it lasted throughout this lapse of time. Drowsiness and numerous spasmodic affections were alternatively giving way to more lucid intervals; during which periods the patients did not seem to be in imminent danger, and while reclining, they swallow whatever is placed in their mouth. They sometimes suddenly return to a state of consciousness, awake from their stupor and converse, but as suddenly relapse into their former condition. This miserable and uncertain state of such patients is described by their friends as one, which places them between life and death.

I remember a case, where, during the period of coma, the left eyeball was very prominent, and the whole eye œdematous.

Often I observed during the spasms an imperfect hemiplegia; in some patients, on the left; in others, on the right side. The arm and leg could then be moved but little, and therefore the patient used the opposite members, whenever he wished to change his posture. The nature of his motions, and even the movements of his features, demonstrated already this partial state of paralysis. The convulsions agitated the lame side in a very slight degree, or not at all.

During the state of coma, I remarked in some hydrencephalic patients a kind of rhytmic striking of one of the arms; the patient raised it upwards, thrust it into his hair, or brought it to his nose, and then laid it down; after a certain time this motion was recommenced, and indeed, I have attended children, who have pursued it for several successive days.

One of the most characteristical phenomena in the hydrops ventriculorum cerebri acutus is the seeming likelihood of recovery that appears generally a short time previous to death.

This disease is not altogether independent of the state of the atmosphere, for it displayed itself so generally at appointed seasons, that the cause must necessarily have been attributed to the particular state of the air, and by no means whatever to casualties. Especially in the spring of the year, 1818, I had an opportunity of acquiring that experience in the case of many children. Exactly at the same time adults were more than usually affected with *epilepsy*, and those adults who had never before experienced it, suffered in common with such as had previously had it; however their disease, particularly that of the former, was not very obstinate, and the cure was radical. At the same time, vertigo, congestion of the brain, and apoplectic affections were prevailing. The weather was dry, and the wind generally from the east and north-east.

If the abdominal period lasts a long time, without being for some weeks succeeded by violent affection of the head, I should conclude, that the secretion of the water will rather be preceded by a mere congestion, than by a real inflammation of the brain.

Certain conditions of the abdomen have this peculiar character, that they excite congestions or inflammation of the brain, and the formation of water in the ventricles, by a sympathetic influence upon the head. To these may appertain such cases of the disease, as began merely with gastric symptoms, unaccompanied by any symptom of an affection of the brain, this latter subsequently appearing. Often in the dissection of those who died hydrencephalic, there were found disorganizations in the abdomen, swelling of the glands in the mesentery, inflammation of the liver, of the intestines, &c.

It is very easy to observe, that an hereditary disposition for that disease, sometimes prevails. One family of my acquaintance lost three of its members by the hydrops ventriculorum cerebri acutus; in another, I saw three individuals labouring under this disease, in its more or less advanced state, and I have often seen brothers and sisters suffering at the same time from it.

By one of the phenomena which this disease produces, we are reminded of similar observations, made in relation to croup; namely, that dissection at times does not present to our view that state of the brain, whereby the former condition of the patient may be satisfactorily proved, and we only find a small quantity of water in the ventricles, whereas we should have expected, according to the degree of disease, a much larger quantity of it. I particularly experienced this in the case of a child of two years, who was suffering very acutely from this disease, and whilst it was also suffering from cutting the two hind teeth. The engorgement of the vessels of the brain, was in that case very great, and blood instead of water seems in such instances to be effused into the ventricles of the brain, producing pressure upon the brain, and similar symptoms.

The physician is much more successful in the treatment of croup, than in hydrops ventriculorum cerebri acutus. The former, even in its incipient state, is attended with many frightful symptoms, but if the physician be called in at an early period, he is generally able to control the violence of the disease in a short time. Whereas people most commonly misunderstand the approaching danger of hydrencephalus, and should the physician have the good fortune to remove the complaint, still his merit, as displayed in the cure, is at times not sufficiently acknowledged, because the patient was not believed to be very dangerously ill. If the disease has arrived at that stage, wherein its imminent danger becomes manifested even to the unexperienced, as when attended with convulsions, &c. then, in most instances, a cure may be despaired of. Finally, the uncertainty in the diagnosis of this disease in its commencement, in many cases, prevents the physician from adopting measures sufficiently powerful to prevent the farther progress of this disease.

Even should the disease be not very far advanced, its cure is nevertheless very difficult, but if the water is already exerting a strong pressure upon the

brain, it is incurable. The following remedies have been found most efficacious.

Remedies for internal use.—Hydrargyrum in not too small a dose, and administered for a considerable time; particularly calomel, on account of its effect in producing a frequent stool, but in some instances it is better to use the more penetrating hydrargyrum oxydulatum nigrum, (mercur. solub. Hahnemanni.) Digitalis purpurea produces an alleviation of the disease if the secretion of urine be increased by it; but the patients can seldom bear it, because it excites nausea and uneasiness, and augments the vomiting.* In some instances rad. scillæ mixed with mercury, were accompanied with a happy effect. In addition to mercury, I have also remarked the utility of the kali, (carbonicum,) saturated with vinegar, (potio riverii aceto vini parata, seu liquor kali acetici extemporaneus,) together with aq. patrosel. or aq. flor. til. in like portions; the vomiting being diminished, the gastric affections in general mitigated, and the secretion of the urine, which is so necessary in this disease, being increased. Flores zinci with magnesia, acted successfully in several instances, though they were inferior to the before-mentioned remedies.

More irritating remedies were sometimes accompanied by a very happy result, but only after the free use of mercury, bleeding, &c. Flores arnicæ and moschus, were found to merit the preference during periods of weakness of the pulse, dimness of sight, constant paleness of the countenance, and exhaustion of the patient.

Remedies for external use.—The principal is the application of leeches in a sufficient quantity around the head, and these sometimes repeatedly applied, but if the patients are somewhat advanced in years, a venesection. Cold fomentations to the head, which part in the very commencement of the treatment should be shaved, for the purpose of employing the external remedies with greater effect. These are composed of nitrum, sal. amon. vinegar and water, but the best application is ice in a bladder. Embrocations with ungt. Neapolit, (ungt. hydrarg. ciner.) to the neck or head, or in the beginning of the complaint, with ungt. e tart. stibiat. in order to produce pustules on the head. Vesicatories to the neck, and kept open. The use of clysters with vinegar, assafœtida, &c. Tepid foot baths with mustard, sinapismata to the legs, &c.

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47. *On Croup.*—M. Emangard, physician of Laigle, in which place croup is a very frequent disease, has lately published a practical treatise on that complaint. The following is a summary of his opinions, which he gives in the form of general propositions. 1st. The term *croup* ought to be restricted to angina, in the fatal issue of which there is formed on the mucous membrane of the larynx, and often even on that of the bronchiæ, a peculiar membrane. 2d. It is probable that this disease has always existed, but that the frequency of its development is subordinate to the physical education of children, submitted to the causes which produce it. 3d. It was not until the middle of the sixteenth century that a description of croup was given by Baillou, and more accurately two centuries afterwards by Ghisi and Home. 4th. It is of most frequent occurrence in northern countries. 5th. It comes on more frequently at night than in the day. It often attacks without any premonition. 6th. The cough is never wanting—it is pathonomonic; the respiration is also peculiar. These two signs are sufficient to distinguish the disease, they always appear simultaneously. 7th. The interior of the throat does not present any peculiar appearance; deglutition is easy. 8th. The rapidity of the progress of croup is very variable. 9th. The affection is essentially inflammatory; its division into species is arbitrary and useless. Little importance ought to be given to the division into periods. 10th. The duration of croup always depends upon the promptitude with which assistance is afforded. 11th. It almost always termi-

* I have not yet employed the acidum salis oxygenatum in hydrencephalus; but upon observing its effects in other diseases, particularly in scarlet fever, we may likewise in this disease expect a successful result from the use of it.

nates in death if it is misunderstood. It is always curable if it is attacked at its commencement. 12. Patients afflicted with this disease are subject to relapses; these are often the consequences of the treatment employed. 14. The croup and the asthma of Millar are two distinct diseases, and require different treatment. 15th. Croup is a disease of infancy, but no age is exempt from it. 16th. Free local depletion, to the extent of producing paleness employed at the commencement of the disease is a true specific in croup. 17th. When the use of revulsives joined to this means is insufficient, and the disease arrives at its second stage, death in the greater number of cases is inevitable, temporizing is fatal, it is necessary to perform tracheotomy as quickly as possible. 18th. The performance of this operation is exempt from all danger.—*Annales de la Médecine Physiologique, September*, 1827.

48. *Diabetes.*—Dr. G. C. Montani has cured this obstinate disease by a stimulant plan of treatment. The patient had laboured under the complaint for some time, and was extremely reduced in strength, and afflicted with an almost insatiable thirst, and passed about eighteen pounds of urine in six hours; the quantity of food and drink taken in that period being fourteen pounds. Dr. M. put her on the use of stimulants, consisting of a decoction of bark, with laudanum and Hoffman's elixir; this producing good effects was persevered in for five months, when a perfect cure was effected. The patient took during that time, thirteen pounds of decoction of bark, two ounces and a half of Hoffman's elixir, besides laudanum, wine, &c.—*Journal des Progrès, Vol. V.*

OPHTHALMOLOGY.

49. *Description of a Cataract Needle.* By Arthur Jacob, M. D.—This instrument consists of a common needle of the size "known in the shops, as number *seven*, being the forty-fourth part of an inch in diameter, about one-half the size of the finest Saunders's needle which is made. The point can be turned to the requisite curve by means of a pair of cutting forceps, or the ward of a small key; of course without heat, which would destroy the temper. It must not however be expected that all needles are so soft as to be bent thus cold: there may not be ten in an hundred of this temper, but when once turned they retain the curve without any danger of bending or breaking, and certainly possess a degree of strength and temper, never observed in needles separately forged and finished by the best cutlers. They should always be tried before use, by passing them repeatedly through thick calves-skin leather. After they have received the requisite curve, the point should be cut flat on each side, on a fine hone, and carefully examined with a magnifying glass, to ascertain that it is perfect. The extent to which the point should be curved, may be left to the choice of the surgeon, reminding him that the greater the curve the more effectual the needle will be when introduced, but the difficulty of introducing it through the cornea will also be greater. I therefore recommend those who use it for the first time to choose one slightly curved. After the point has been turned, the needle, held in the jaws of a pair of pliers or a vice, is to be run down into a cedar handle, without cement, leaving only *half an inch* of blade, which I have found to answer every purpose. If the blade be left longer it will yield and spring when opposed to a resistance. The handle should be about a fifth of an inch in diameter, and four inches long. I use the handles made for camel-hair pencils, and find that a metallic ferule, which increases the weight, is unnecessary and objectionable. A needle thus constructed, and preserved free from rust, will retain its point for a great length of time: I have used the same one a dozen times without sharpening.

"The surgeon, provided with such a needle, places himself in the usual position with respect to the patient, availing himself of whatever assistance he

may find necessary to secure the lids.* He then brings the point of the needle within a very short distance of the eye, and when the cornea is brought into an advantageous position, he suddenly strikes the needle into it near its circumference. As I do not apprehend any opacity from the wound, I am not very particular, with respect to the precise point, where the needle pierces; I generally, however, enter it sufficiently near the margin to obviate defect from this cause. The point of the needle once fastened in the cornea, the surgeon has complete command of the eye; no action of the muscles can disengage it, and there is no danger of the needle slipping into the anterior chamber; an elevator or ophthalmostat is therefore altogether useless. The operator now pushes the needle through the cornea, which frequently yields like wet leather, and the eye often turns so much toward the inner canthus that the pupil is hid, and he must rely upon his knowledge of the course which the needle necessarily takes, in order to conduct it to the lens. This is the principal difficulty to be surmounted. If the surgeon does not now steadily push the needle forward, whatever resistance he may feel, he will find, when the eye returns to its proper position, that the point of the needle is still merely entangled in the cornea. This also is the period of danger to the iris: if the operator does not keep the flat of the needle to that membrane, with the point down, and the convexity up, he will be very liable to injure it. Should it happen that the point of the needle has passed through the iris, it may be easily extricated by gently drawing back the instrument without removing it from the eye. After the needle has been fairly entered, and that the operator sees its point at the opposite side of the pupil, he brings the cornea forward, merely by pulling it upon the needle, to which it is completely secured, in consequence of the blade being wedged into its texture. He now turns the point directly back, and gently tears open the capsule, picking and scratching the surface of the lens with a rotatory or drilling motion of the instrument; not with the lever or cutting movement, which is necessary when Saunders's needle is used. If the lens be soft and friable, the fragments fall like snow into the anterior chamber, and the surgeon may deal very freely with it, pushing the needle deep into its structure, and twirling the point round so as to mash it into a pulp. If however it proves hard, and that he attempts to deal thus with it, he fixes his needle in its tough and glutinous structure, turns it out of the capsule, drags it against the iris, and makes it necessary either to extract it or force it back into the vitreous humour. If the cataract be hard, the capsule should be opened, and the centre of the lens cautiously scratched with the point of the needle, so as to expose its texture to the contact of the aqueous humour, by which it is softened and fitted for breaking up on a future occasion. In withdrawing the needle the surgeon has to encounter the same description of difficulty which attends its introduction; it is tightly held by the cornea, requiring to be turned on its axis in order to extract it, as an awl is drawn from leather. It must not however be forgotten that this wedging of the instrument is attended with the great advantage of enabling the surgeon to operate on the most unsteady eye without an ophthalmostat or elevator."—*Dublin Hospital Reports, Vol. IV.*

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50. *New method of treating Amaurosis.*—M. MAJENDIE having previously proved by experiment that the concurrence of the nerves of the fifth pair, are as necessary to vision as that of the optic nerves, supposed that amaurosis might sometimes arise from a paralysis of the first of these nerves, and that by powerfully exciting them, we might produce advantageous results. Being satisfied that these nerves might be punctured with impunity, and having remarked that the pupil was contracted whenever he pricked either of the orbitar branches of the fifth pair, he passed one needle into the frontal nerve, and another into the

* Some ophthalmic surgeons recommend that the left hand be employed to operate on the right eye, supposing the operator to sit in front of the patient. I operate on the left eye sitting opposite to the patient, on the right standing behind him with the head resting against my chest; this latter position I find by far the most favourable and convenient.

superior maxillary, and connected each with one of the poles of a voltaic pile. In a case of amaurosis of one-half of the retina, accompanied with paralysis of the superior eyelid and some of the muscles of the eye, in three months the retina and muscles of the eye were restored to the performance of their healthy functions.—*Journal des Progrès, Vol. IV.*

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51. *On the use of Chloruret of oxide of Calcium in Purulent Ophthalmia.* By Dr. Varlez.—Dr. Varlez, of the Military Hospital of Brussels, having been struck with the rapidity with which the chloruret of the oxide of calcium, when applied to ulcers, diminished the suppuration, was induced to try it in purulent inflammation of the conjunctiva, and also in the inflammation of the meibomian glands; and he has found it to be extremely useful, indeed he extols it as the most valuable remedy known in these cases. "I do not, however, suppose," says he, "that it can enable the practitioner to dispense with the other resources of art, when they are indicated by the state of the disease: it is thus that in severe acute ophthalmia, I employ copious general bleeding, frequently repeated, purgatives, calomel, pediluvia, &c. while in chronic cases I use setons, blisters, &c. conjointly with the solution of the chloruret."

Mr. Guthrie relates also several cases treated at the Royal Westminster Infirmary for Diseases of the Eye, with this remedy, which prove its utility.

The chloruret is applied in solution, in the proportion of one scruple to an ounce of distilled water; and the strength may be increased to four drachms of the chloruret to one ounce of water. This solution may be dropped in the eye, injected with a small syringe, or applied with a camel's hair pencil. When the solution ceases to be of service, he recommends that the quantity should be augmented, or its use suspended and again resumed after a time.—*Lond. Med. and Phys. Journ. November*, 1827.

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52. *Gonorrhœal Ophthalmia.*—Mr. Wishart relates in the October number of the *Edinburgh Medical and Surgical Journal* a case of gonorrhœal ophthalmia, and concludes the account with some remarks on the character and treatment of the disease. These are for the most part very judicious, but there are two or three remarks in relation to its diagnosis, in the correctness of which we believe he will not be sustained either by observation or reason.

"The course of gonorrhœal ophthalmia is marked," says Mr. Wishart, "not only by the rapid extension of the inflammation from the lids to the eyeballs, but by the state of chemosis of the conjunctiva of the eyeball, and the rapid destruction of the anterior membranes of the eye."

Inflammation of the conjunctiva differs in its violence only, and as the degree may be influenced by the activity of the exciting cause, gonorrhœal matter, which is a very acrid secretion, when applied to the conjunctiva, generally, it is true, produces inflammation of a high grade, and which runs its course with great rapidity. But other causes produce inflammation of the conjunctiva, equally violent and rapid in its progress. Thus exposure to the heat of the days, and the light reflected from the bright sand, and the coolness of the evenings, in Egypt, excited in the soldiers of both the French and English armies during the famous campaign in that country, inflammation of the conjunctiva of a most violent grade, and which run on to destroy the eye with great rapidity. To the inflammation thus produced, the name of Egyptian ophthalmia was given, and it was erroneously considered by many surgeons as a peculiar inflammation. Between the inflammation excited by gonorrhœal matter and that produced by the above causes, no one has as yet succeeded in pointing out diagnostic characters, in fact there is no specific difference between them.

Mr. Wishart further remarks "during the whole progress of the disease, (gonorrhœal ophthalmia,) we never meet with any symptoms of inflammation of the iris; thus showing the distinction between this species of ophthalmia and the ophthalmia from true syphilis." When inflammation of the conjunctiva is produced by the application of the secretion from an inflamed urethra, when

it supervenes to the suppression of this discharge, or when it occurs during the discharge from the urethra, (we adopt the definition of Mr. Wishart, though we confess we do not understand his last form or *species* as he calls it,) it is considered as gonorrhœal ophthalmia. When in like manner inflammation of the conjunctiva is concomitant with, or supervenes to syphilis, it is named by those who believe in the specific nature of that poison, syphilitic ophthalmia. The whole amount of Mr. Wishart's remarks then appears to us to be that inflammation of the conjunctiva is not inflammation of the iris. If, however, he means to say that inflammation of the conjunctiva, when occasioned by gonorrhœa, never extends so as to involve the iris, he is assuredly wrong: moreover, *metastasis* of gonorrhœa sometimes takes place to the internal tissues of the eye; three or four cases in which this occurred are noticed in the preceding series of this journal.

Mr. W. also says that ulceration of the cornea in gonorrhœal ophthalmia, "differs from all other ulcers of the cornea which are funnel-shaped and filled with pus, whereas in this ophthalmia they are extensive, unequally deep, and seem exactly as if a bit of the cornea had been torn away with a hook." This diagnostic mark is as fallacious as the others. When the inflammation in gonorrhœal ophthalmia terminates in ulceration, it is usually in sloughing ulceration, as often occurs where the preceding inflammation is very violent, and on the separation of the slough, the ulcer described by Mr. W. is left. We have seen precisely similar ulcers succeed violent inflammation produced by blows and other mechanical injuries, &c. especially in drunkards, and in persons of depraved constitutions.

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53. *Ossification of the Cornea.*—The eye of an old man was lately presented to the Société Anatomique, by M. Monot, in which the cornea was ossified throughout.—*Nouv. Bibl. May*, 1827.

SURGERY.

54. *Injury received in Dissection, without the Operator being Wounded.* By Sir Astley Cooper.—The terrible consequences that have resulted from wounds received on dissection are too well known to require notice here, but it is not generally known that distressing effects are sometimes produced without any wound or abrasion upon the hands of the operator. Sir Astley Cooper says "It would seem that under certain circumstances a poison is produced sufficiently strong to excite inflammation, even when there is no wound," and he relates the following case:—

"Mr. Cook, surgeon, at Marsh-gate, Westminster Bridge, sent to me whilst labouring under the highest irritative fever, in consequence of having opened the body of a person who had died of puerperal fever. When I examined him, I found the extremities of his fingers of both hands inflamed, as if they had been dipped in scalding water, and the absorbents of his arms red, hard, and knotted to the axilla; yet he had not any wound or abrasion of any kind upon his hands, and it would therefore seem that the fluid produced in the abdomen of this woman, in which his fingers had been frequently immersed was of a highly stimulating nature."—*Lectures on Surgery, Vol. III.*

M. Bégin relates a somewhat similar case—see page 390 of this number.

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55. *Periostitis.*—Dr. Casini reported to the Medico-Physical Society of Florence, at their sitting of the 10th of June, three cases of idiopathic periostitis, two acute, and one chronic, which required surgical operations, from which he concludes that the inflammation of the fibrous envelope of the bones is the principal cause of caries, of necrosis, of atrophy, and absorption of the bone. He believes the best mode of curing these diseases is to open promptly the

tumours which he does not consider to be characteristic of syphilis, as M. Montfalcon does. Having observed that periostitis, however near it approached the joints, always spares them, Dr. C. has adopted the opinion sustained by some anatomists, that the periosteum is not continued upon the articular surfaces, or that the perichondrium is an entirely different membrane from it. —*Journal des Progrès, Vol. V. from the Antologia Gior. di Sc. Firenze Luglio,* 1827.

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56. *Recto-vesical Operation for Stone.* By Dr. Wenzl.—"This operation was performed with success by Dr. Wenzl, of Munich, on a young man seventeen years of age. The calculus extracted from the bladder was three inches and six lines in length, and in breadth and thickness it was two inches and ten lines: it weighed two ounces. It was composed of an external crust, formed of phosphate of lime and of magnesia; and the kernel was composed for the most part of uric acid, with oxalate of lime. The operation was attended with complete success; and the author combats the objection made to the recto-vesical method, particularly by Scarpa."—*Bulletin, &c. July,* 1827.

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57. *On the Remedies employed for the cure of Tetanus.*—Sir Astley Cooper divides tetanus into two kinds; one acute, "which generally terminates the patient's existence;" the other chronic, "which, after a time, is often recovered from."

The treatment which he has seen pursued in acute tetanus, has been—

"The warm bath, which gives a temporary tranquillity, and slightly reduces the spasms; but is not followed by any permanent good effects.

"Bleeding, which hastens the patient's death; it reduces the powers of the body; and, although the spasms are less violent, they destroy it sooner.

"Opium, I have generally seen given; but, in acute tetanus, never with any other advantage than a slight mitigation of the symptoms for a short period. I once saw Mr. Stocker give, at nine o'clock in the evening, half an ounce of tincture of opium, and at eleven o'clock an ounce more, without any permanent beneficial influence. To me, it appears to be absurd to resort to a treatment which has been repeatedly found to be inefficacious.

"Tobacco injections I have seen used, but with no permanent advantage.

"Digitalis I have known employed, but uselessly.

"Ice I have seen extensively applied; but all these means, in acute instances fail."—*Lectures on Surgery, Vol. III.*

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58. *On the use of Sutures to preserve the Approximation of the lips of Wounds.* By Sir Astley Cooper.—Considerable prejudice exists in this country, and we cannot help thinking with some justice, against the use of sutures. Sir Astley Cooper, however, says that "it is quite a mistake to suppose that sutures are injurious, and that they should be never used; for a wound often heals better with a suture and a cooling lotion, than with adhesive plaster. Indeed adhesive plaster should not be applied to the edges of wounds. Often have I seen it produce erysipelas, and sometimes the erysipelas followed by the death of the patient. After the removal of a large tumour from the breast, I often employ a suture to keep the parts in exact contact, and to prevent the edges from becoming inverted." Sir A. C. recommends that the thread employed should be as fine as possible, and that only as many sutures as are absolutely necessary to produce the desired effect, be inserted.—*Lectures on Surgery, Vol. III.*

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59. *Case of Aneurism cured by Compression.* By Dr. A. De Winter.—In the first No. of the second volume of a periodical journal, devoted to surgery and midwifery, entitled "Der neue Chiron," Dr. De Winter gives an account of a wound of the brachial artery, made in performing the operation of blood-letting in venesection of the basilic vein of the right arm of the Queen of Bavaria, which he cured by a compressing bandage. A history of a case of false circum-

scribed aneurism of the radial artery, cured perfectly by the compressing bandage of Heden, the circulation in the artery being preserved, is added by Dr. Weissbrod, professor of the medico-practical school of Munich.—*Bulletin des Sciences Médicales, July*, 1827.

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60. *Treatment of Wounds of the Trachea and Œsophagus.*—Sir Astley Cooper recommends that in these cases, all food, solid or liquid, should be avoided, and that the patient be supported, as long as nature can bear it, by clysters. He objects "entirely to the introduction of tubes into the œsophagus, as worse than unnecessary; for they are highly injurious by the cough which they occasion by their irritating; and if adhesion or granulation have taken place to close the wound, such tubes tear it open again, and destroy the process of restoration."—*Lectures on Surgery, Vol. III.*

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61. *On Amputation and the Omission of Ligatures to the Vessels.* By Dr. L. Koch, of Munich.—Notwithstanding the numerous researches and experiments on the alterations and condition of compressed vessels at the place of ligature, it is surprising that the most inaccurate ideas are still entertained on the subject, and that the opinions of physicians and surgeons, on the spontaneous cessation of hæmorrhage from divided vessels, should still be so contradictory and uncertain. Dr. Koch thinks that the subject has not been studied minutely enough, or the phenomena observed with sufficient impartiality to arrive at the truth. He believes that timidity also has prevented our observing that the ligature is useless in many cases, while experience has shown its disadvantages. There are few who will amputate a limb, and fearlessly trust to nature for the security of the cut vessels. Dr. K's father, director of the General Hospital of Munich, "*has not tied a single artery in the various amputations which he has performed for the last twenty years.* To this wide range of experience, the son has added his own, in corroboration of the opinions of his father and of himself, respecting the imaginary danger of leaving vessels untied in amputations.

Arteries, says he, when cut and not tied, remain entirely open, up to the place where they are divided:—The canal of arteries tied in the usual manner remains open also to the spot where the ligature is applied, and their parietes do not unite at this spot. These observations were repeatedly made by the author's father on dead bodies, where the arteries had been cut by him, or tied by other surgeons, many years previously. He always found the diameter of the vessels that had *not* been tied, contracted as they approached the place of section, but the parietes never adherent till the artery ended in a kind of cicatrix. These things are seen in numerous preparations by the author, in the anatomical museum of Munich.. The vessels that had been tied presented the same appearances, except that, at the spot where the thread had been applied, there was a narrowing, but never an obliteration of the canal of the vessel.

In a disarticulation of the hand, the surgeon had tied the radial artery, and omitted to tie the ulnar, as it did not bleed. The ligature came away on the 8th day, and on the succeeding day the patient died. On examination, the terminations of the two arteries were so similar, that it was difficult to say which of them had been tied by ligature. Both extremities were perfectly pervious—the radial artery appeared to be slightly torn at the termination.

In numerous experiments on dogs, our author could perceive no difference between the arteries that had been tied, and those that were left to nature. Thus, he tied the femoral artery of a dog, and cut the vessel below the ligature, without hæmorrhage. The wound was closed and healed. A month afterwards he killed the animal, and found the upper and lower extremities of the vessel were completely similar, each being united to an external coagulum by an open mouth.

The formation of a coagulum takes place in some, but not in all cases. But it produces the same effects in the vessels which are tied, and in those which are cut, and not tied. In ligatures of arteries, the internal coagulum is

often found in connexion with the external, so as to fill exactly the orifice of the vessel. The coagulum is rarely adherent to the internal parietes of the vessel, and never completely so up to the nearest anastomosis. An amputation was performed at the hip-joint, and the crural artery was tied. The ligature came away on the eleventh day, and, on the fourteenth day, the patient died. On dissection, a clot was found plugging the artery, but the canal of the vessel was open. In a very few cases indeed was the bore of the artery found obliterated after the ligature, by adhesion of the sides of the vessel.

No doubt, says the author, "that most surgeons will stare when I propose the general abandonment of the ligature, as the means of preventing hæmorrhage, especially in amputations. They will be still more surprised when I assert, that, by this omission of the ligature, the most certain means are taken to obviate effusion of blood. Yet this assertion rests on the basis of experience, and can be testified to by all those who have witnessed my father's operations in a public hospital for twenty years past."

Dr. K. appears to think that the spontaneous cessation of hæmorrhage from a divided vessel, depends *chiefly* on some change in the blood itself—partly in retraction of the vessel. The coagulum he considers as the *effect* rather than the *cause* of this cessation of hæmorrhage. This last conclusion appears plausible; for it is hard to conceive that coagulum can form *during* hæmorrhage—and if it form after the cessation of the flow of blood through the orifice of the vessel, it can hardly be viewed in the light of a *cause* of that cessation. All that can be said in this case is, that the coagulum may prevent subsequent hæmorrhage; but this our author denies.

"The application of the ligature," says he, "in disturbing the spontaneous cessation of the hæmorrhage, acts in a manner quite opposed to the end in view. It produces, it is true, a mechanical and temporary obliteration of the bore of the artery, but this is inferior in value to the natural retraction of the vessel, and spontaneous cessation of the hæmorrhage."

This spontaneous cessation is to be aided, or rather promoted, by pressure on the trunk of the vessel leading to the part, and a gentle degree of the same on the face of the stump, either by the hand or by a proper bandage. By these means the stasis of the blood is promoted, and protection from future hæmorrhage secured.

The method pursued by Dr. K. and his father in amputations is as follows:—After dividing the soft parts and bone, the surface is sponged, and the muscles and integuments brought neatly into contact, and retained by adhesive plaster, so as to secure adhesion by the first intention, if possible. *During* the operation, the vessel is compressed by the fingers of an assistant, and *afterwards* the pressure of the fingers is rendered unnecessary by the application of a compress, laid along the trajet of the main artery, secured by a roller. The patient is then placed in his bed, and the stump kept elevated, and an assistant is directed to make gentle pressure on the face of the stump, for an hour or two—or longer, if he feel considerable pulsation in the part. "When this pulsation has ceased, and when the dressings appear tinged red by the exuding lymph, all danger of hæmorrhage is considered as at an end, provided the patient keeps quiet. Presently, the exudation of lymph ceases—and the dressings becomes quite dry and cold." The patient generally passes the first few days without fever, on which account he is allowed wine, coffee, and other food, which dare not be given under other circumstances. No opiates or medicines of any kind are usually exhibited after the operation. About the fifth day, there is generally some traumatic pyrexia evinced, owing to the suppurative process going forward in the wound; but it requires no particular treatment. A moisture taking place on the dressings about the seventh day, indicates the establishment of suppuration; but if the dressings keep dry, union by the first intention is sure to have occurred. Whether suppuration or adhesion has taken place, the dressings are never removed before the tenth day, or even later, unless violent inflammation or hæmorrhage should arise. They consider that

the adhesion of the integuments and muscles is never properly consolidated before the tenth or twelfth day, and therefore that much mischief is done by too early a removal of the dressings."—*Journal des Progrès, from the Journal für Chirurgie und Augenheilkundie von Græfe and Walther, p.* 9. *t.* 560.

62. Civiale's *Operation for Destroying the Stone.*—Dr. La Roche, of this city, has seen M. Civiale operate upon two individuals, and *explore* the bladder of a third, (who had been previously operated upon several times,) to find out if there remained in it any fragments of calculi. "In the first of the two before-mentioned individuals," Dr. La Roche writes to Dr. Hodge, "the stone had been in part pulverised and broken, in some previous sittings: in consequence of which, a fragment had passed into the canal of the urethra, and was stopped within half an inch or an inch of the end of the penis. M. Civiale succeeded, by means of a pair of dissecting forceps, in breaking this fragment, and extracting it by pieces; for it was very large, much more so, indeed, than was at first expected, and so irregular as to adhere very firmly to the coats of the canal. Another, but smaller piece, was discovered a little lower down, and scooped out with the help of one of the blades of the lithontriptic forceps. This done, M. C. introduced a curved gum-elastic canula into the bladder, and through it injected some water into that viscus. I must here mention, that after the canula is removed, the greater portion of the water remains in the bladder, which I confess somewhat astonished me; for I had been induced to expect, that the liquid, by irritating the mucous membrane of the bladder, would compel the viscus to contract, and empty itself. Perhaps it is to guard against this effect, which I now suspect will only arise from the stimulus of distention, that M. C. never injects more water than the bladder can well receive with ease, and always inquires of the patient, the best judge in those matters, if a sufficient quantity has been thrown in.

"The next step in the operation was the introduction of the instruments. This as you may remember, was thought in America to be difficult, and even to constitute one of the greatest objections to the operation itself; because these instruments are straight, while the canal of the urethra, through which they must necessarily pass, is curved. Be the shape of the urethra, however, what it may, no such difficulty was encountered by M. Civiale. I will even go further, and affirm, that in these cases, the introduction was effected with more facility, and in much less time, than I had ever seen done by other surgeons, with the common curved sound; so that I am disposed to conclude, that all the objections raised against the operation, and grounded solely on the shape of the instruments, can be very easily removed by witnessing a trial of them by a skilful surgeon. After searching a little while, a fragment of stone was discovered; but, as it was somewhat small, some difficulty was experienced in grasping it firmly enough between the blades of the forceps to allow the full effect of the file. This was finally done, however, and as the stone was soft and friable, the boring was accomplished in a very few minutes. A quantity of sand mixed with water was passed out during the operation between the urethra and the sound. No difficulty was found in turning the stone when it had been bored; all that was necessary was to loosen it a little in the forceps, turn them rather suddenly, and move them about. The boring was once more resumed; after which, the instruments being removed, the patient was allowed to make water. Another operation, to which he was to submit a few days after, has probably terminated the business in this case, and rid the patient at least for some time, of his painful complaint. He appears to have laboured a very long time under the calculous diathesis; as he is now upwards of sixty years of age, and was cut at twelve years for the stone. M. C. was not a little pleased to point out to me a fistulous opening in the perineum of this man, consequent on the operation last alluded to.

"The second patient was about fifty years of age and had laboured a long time under the disease. The stone was very hard and large, and had already

necessitated eight operations. Water was injected, as in the former case; the instruments were introduced with the same facility; the stone seized almost immediately, bored, turned, and bored again several times. M. Civiale did not expect to remove all that remains of the calculus, without three or four more sittings. As regards the third patient, I have already said, that M. C. merely sounded him, to ascertain if there remained any fragments of stone in his bladder. This was accomplished with the full set of instruments, so that if any thing had been found, it would have been seized at once and destroyed.

"The degree of pain, caused by the operation in the cases I witnessed, varied. In the first it was considerable, and the patient could hardly prevent himself from bearing down and expelling the water. This was particularly the case while the stone was sought after. In the second, much less pain was experienced; while the third patient seemed to suffer very much, from the motions which were necessarily imparted to the instrument, with a view of exploring the whole of the viscus. After the operation, the patients seemed very little incommoded, and, after making water, walked out as if nothing had happened. They are subjected to a suitable regimen, for preventing the occurrence of inflammation, and with the same intention they are recommended to resort frequently to the use of tepid baths.

"This method of removing the stone from the bladder, requires, as you may readily presume, a great deal of dexterity, and a considerable experience in the use of the instruments, on the part of the operator. Many of the best surgeons in France have failed in their first trials; and I am really sorry that in our country it should have been laid aside so soon, merely because those who resorted to it, were not able to wield the instruments at once, with sufficient dexterity to seize and bore the stone as readily as those who had more experience than they. As regards M. Civiale, it is impossible to see him operate without admiring the care with which he introduces the instruments, and accomplishes all the steps of the operation. It is true, that this dexterity can only be acquired by long exercise; but can we not say the same of all operations? and ought a surgeon to lay aside, in despair, and even to censure, a new, less painful, and less dangerous method of ridding a patient of the stone, because, after pushing into the bladder an improper instrument, he has failed to grasp the stone and to destroy it? I have said an improper instrument, because after witnessing M. Civiale's operations, and examining attentively his instruments, I am convinced that the failures in America arise from the improper construction of those made use of there. For example, M. Civiale's forceps, present, when closed and placed in the canula, an olive-like extremity. This is easily done; for two of the blades which are curved in at the extremity are of the same length, and placed in pretty close contact, while the third, being longer, laps, as it were, over the others, and, the extremity being curved like that of the former, forms the extreme end of the olive, and, when imbued with simple cerate, offers little or no roughness to the urethra, as it is pushed along into the bladder. In order that the blades should be of sufficient strength, they are made pretty thick, and are rather larger when closed than the canula, so that they cannot pass through the latter; and to be placed at the end of it, it is necessary to introduce their stem backwards. Into this stem is also introduced backwards, that of the rasp or file. Here, then, is a complete instrument, three in one, the extremity of which is formed by the forceps, and of the proper shape for finding its way into the bladder."

Several of the surgeons of Paris have devoted great attention to the operation of breaking down the stone, and some have made alterations in the instruments employed for that operation by M. Civiale, among others M. Meirien, who offers the following objections to those used by M. Civiale. 1st. That the olive, which the three blades of the forceps form by their union, not being complete, its introduction is difficult, and the mucous membrane of the urethra, dipping into the interstices which exist between them, may be torn, (or, as he expressed it, ploughed,) by the lithontriptor. 2d. The strawberry

extremity of the lithontriptor presenting a larger diameter than the cavity of the tube of the stem of the forceps, it is impossible to introduce and withdraw it at pleasure, so that it is necessary, in order to distend the bladder, to introduce primarily an ordinary catheter, and inject water into that viscus before the introduction of the instruments, which complicates the operation. Moreover, as the water injected into the bladder always escapes during the operation, it may happen, owing to the difficulty of replacing it, that the bladder will embrace powerfully the stone and the instruments, and, in consequence of this, the surgeon will not be able to get rid of the former, and from this to disengage the instrument, with a view of withdrawing it from the bladder; or if it succeed, it may only be with the danger of pinching and tearing that viscus. 3d. This accident is so much the more to be feared, as the hooks which form the extreme ends of the blades of the forceps pass over each other, and can, consequently, the more readily seize and tear the coats of the bladder. The fear of this accident is not imaginary; for it has been found, by dissections, to have really happened. 4th. For numerous reasons, which are easily appreciated when we have the instruments before us, the stone is often with difficulty grasped, or it is seized improperly, (as, for example, by its long diameter, or by one of its extremities only,) and then it escapes very readily. This also happens, when the diameter of the stone is more than eighteen lines. 5th. When the stone is seized in the most favourable manner possible, and firmly secured, it is only in our power to bore one hole in it of the size of the lithontriptor, that is, from two to four lines in diameter. It is necessary to seize it, and loosen it a great number of times, which prolongs the operation, and, consequently, the sufferings of the patient; for the seizing of the stone is the most difficult part of the operation for the surgeon, and the most painful for the patient, who generally does not complain during the time we act upon the stone, particularly if the latter has been well isolated from the parietes of the bladder. Repetitions of the operation are always dangerous, when very frequent. 'I have found, on trial on a stone out of the bladder, that to destroy one of an inch diameter, and which is pulverized in ten minutes by means of my instruments,' (it is M. Meirien who speaks,) 'it required to be bored thirty-two times with M. Civiale's; and, even then, there remained fragments which could not have passed through the urethra. It must be noticed also, that as the stone was before me, I could place it in the most favourable positions within the claws of the forceps; which cannot, of course, be so readily done when it is in the bladder; it happens sometimes, also, that after the stone is loosened, and again seized, the lithontriptor is pushed against a part already bored, and it is necessary once more to alter the position of the stone. 6th. If, in the common operation for the extraction of the stone, in which the surgeon has it in his power to explore the cavity of the bladder with his finger, he is liable to leave fragments in that viscus, when the stone has been broken by the forceps, the same accident can so much the more readily happen in the new operation; for we do not possess in this the same means of examining the interior of the bladder. In consequence of this, it happens that patients are imperfectly cured. Of the truth of this, I have in my possession many proofs. It is, therefore, essentially necessary that the stone should be completely pulverized.'"

M. Meirien uses forceps with from six to ten blades, instead of three. "'These blades, like the others, are made of steel, separate from each other, in consequence of their own elasticity, and are brought in opposition by means of a very fine silk cord, passing from one blade to the other, at their extremity, and afterwards communicating exteriorly through the stem. The disposition of the instrument is such that I seize the stone with the greatest facility, and that the fragments that might escape from between the blades into the bladder would always be small enough to pass out through the canal of the urethra. The strength of this instrument is very considerable. It is to be remarked that in all the other instruments there exists a lever of the third species, which is the least advantageous of its kind; because the fulcrum and the

power are very near each other, whilst the resistance is at a great distance, which necessitates so much force as to endanger the breaking of the blades. In my instrument, the mechanism is different. Here the power is placed beyond the resistance, by means of the silk placed at the extremity of each blade. The instrument is used with the greatest facility. After having introduced it into the bladder, I open the forceps, sound for the stone, and inject through the stem six ounces of water. Having found the stone, I open the instrument upon it, by merely pushing a screw, which loosens the silk; and I plunge upon the stone, which can no longer escape. I tighten the silk; the blades, in consequence, close beyond the stone, and the latter is now confined within a sort of steel basket.

"'There is nothing in my instrument which can wound the bladder or the urethra. In order to seize the calculus, I am compelled, as in the other methods, to place my patient in a fatiguing posture. But, however, when it is once secured in the forceps, I make use of a particular kind of bed, with a peculiar screw, which can be fixed also to any table. In this screw, which can be raised and lowered at will, the instruments may be firmly fixed, so that while destroying the calculus, the patient experiences no jarring;' which he must necessarily do, when the instruments are merely held by an assistant. Like M. Civiale, M. Meirien makes use of the bow in order to put the lithontriptor in motion. 'With my instruments,' he continues, 'I attack the stone on a flat surface; I next turn it in order to destroy another part of its circumference. The turning is easily effected by loosening the stone, and allowing it to fall in the inverted cone, formed by the blades of the forceps. In this way I proceed to the last, filing the smallest fragment, and reducing the whole to powder.'

"All the instruments here alluded to by M. M. I saw; and I can vouch for the correctness of his description. They are all really very ingeniously contrived, and if they succeed as well on the living as they have done here on the dead subject, he will certainly deserve a great deal of credit for the alterations he has made in the instruments already in use: for to grind down the stone in one, or at most, in two sittings, and to leave no fragments behind, capable of forming the nuclei of future stones, is doubtless a desideratum. But time and experience alone will decide how far M. M. is founded in his high pretensions, for although he talks pretty largely of what he has accomplished, and of the ease with which he destroys in one sitting a stone of ordinary size, (which has always been the case in his operations,) we have only, so far as I know, his own word for it; whereas M. Civiale's success is known to every one, at least in France, and his operations are already very numerous."—*North American Medical and Surgical Journal, January*, 1828.

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63. *Fistulous opening into the Larynx.*—In a patient at Guy's Hospital, who had a fistulous opening into the larynx, the consequence of a wound upon the thyroid cartilage, Sir Astley Cooper raised a piece of skin from the surface of the neck above the opening, the edges of which he had previously pared: it united extremely well: and the opening was thus closed.—*Lectures on Surgery, Vol. III.*

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64. *Wounds of the Intestines.*—In large wounds of the intestines, Sir Astley Cooper recommends that the lips of the wound be united by an interrupted suture; and the intestine returned into the abdomen, letting the end of the ligature hang from the external wound, which should otherwise be closed with great care. "I well know," he remarks, "that in experiments on animals the ligature has been cut off close to the intestine, which has been afterwards closed, so as to leave the ligature to separate into the intestine. Now, I do not clearly understand that this plan in any way adds to the patient's security; but on the contrary, it increases his danger in my opinion, if the process of adhesion be deficient."—*Ibid.*

65. *Lythotomy.*—Comparative trials of three of the modes of operating for stone, have lately been instituted at the Hôtel Dieu. M. Dupuytren performed on twelve subjects the bilateral operation, M. Breschet the lateral operation on eight, M. Sansom the recto-vesical operation on six. M. Dupuytren lost none of those upon whom he operated, M. Breschet lost two, and M. Sansom one.—*Journal Universel, July*, 1827.

66. *Cancer of the Rectum.*—M. Lisfranc has performed at the Hospital de la Pitié, the amputation of a very extensive cancer, situated upon the lower part of the rectum. The disease extended transversely from one tuberosity of the ischium to the other, and its antero-posterior diameter was about two inches. The finger introduced into the rectum, reached above the indurations, which terminated two inches from the inferior extremity of this intestine. The upper portion of the tumour was very moveable, and could be drawn considerably downwards. M. Lisfranc believed that it affected only the mucous membrane. Two semilunar incisions were made around the ulcerated parts, uniting at their extremities. He dissected from without inwards, as far as the middle of the sphincter; by means of the finger introduced into the rectum, he drew down the intestine, so as to occasion the procidentia of the indurated membrane, and removed the whole with the curved scissors. The wound that remained resembled a deep funnel, and it was evident the sphincter muscles were in great part destroyed. Two arteries only were tied. The patient recovered after a lapse of three months; he retains his fæces as before, and experiences no pain on going to stool.—*Journal Générale de Médecine.*

67. *Amputation of the Neck of the Uterus.*—M. Lisfranc has performed this operation upon twenty subjects, of which number eighteen have been relieved by the operation, in several of them two years have elapsed since its performance. Of the other four two are in a fair way of recovery, and two died, one twenty-four hours after the operation, and on dissection numerous latent cancers were found along the vertebral column, and in the ovaries; the other three months after, from a return of the disease.—*Archives Générales de Médecine, August*, 1827.

MIDWIFERY.

68. "*Accouchement after the Death of the Mother.*—Dr. Klaatsch, of Berlin, has related, (in the *Zeitschrift für die Staatsarzneikunde,*) the case of a pregnant female, who was supposed to have been poisoned by her husband with arsenic, in consequence of which suspicion the body was disinterred a month after it had been buried. The fact of her having been poisoned was thus ascertained, and at the same time the phenomenon was discovered of a fœtus, about the seventh month, lying between the thighs of the woman; the accouchement having taken place after her death. To explain this circumstance, and similar cases related by various authors, Dr. Klaatsch supposes that the extrication of a quantity of gas in the intestines becomes a mechanical cause of the expulsion of the fœtus, accompanied in general with inversion of the uterus, which is facilitated by the complete state of relaxation of that organ. The same opinion was advanced by M. Deneux, in a memoir on this subject published in 1812." —*Bulletin des Sc. Médicales.*

69. *Cæsarian Section.*—Dr. Fridzt, Surgeon and Clinical Professor to the Civil Hospital at Prague, has performed this operation three times, two of which were successful; one was in a case of extra-uterine pregnancy.

Case. The wife of a Bohemian peasant, who had previously had one child, the labour perfectly natural, again became pregnant, "and gestation went on

naturally till the end of the sixth month, except that the tumour of the abdomen was more projecting than usual, and inclined towards the right side. After the sixth month, the movements of the child were not sensible; the breasts became enlarged, and milk oozed from them for a short time. There was also slight uterine hæmorrhage. At the end of the ninth month labour pains came on, were very severe, but subsided, and returned at intervals of ten days till the end of the eleventh month. She was at this time taken to the hospital and examined by Dr. Krombohoff, Professor of Midwifery in the University of Prague. He found a spheroidal tumour in the vagina, and the os uteri turned toward the left side. The case was pronounced one of extra-uterine pregnancy, and the woman was conveyed into the surgical wards and operated upon by Dr. Fridzt. The incision was six inches in length, extending from half an inch below the umbilicus to the symphysis pubis. The head of the child, which presented, was extracted by a simple manœuvre. The placenta and membranes were left in the abdomen. The child had been dead apparently some time. The wound was united by means of adhesive plaster, about an inch of the inferior portion being left open for the escape of fluids from the abdomen. These were the only means employed. She was once bled from the arm, and leeches were once applied. The wound is now almost completely healed, a small fistulous opening remained only at the inferior portion, from which a healthy pus is secreted. She is now taking tonics, and is allowed meat, but neither wine nor beer. The functions are all becoming natural. Stools have hitherto been procured only by means of enemas. The countenance is animated and cheerful, the pulse small, but not irritable; the appetite good."—*Lond. Med. and Phys. Journ. Nov.* 1827.

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70. *Case of Hydatids in the Uterus.* By W. Anderson, M. R. C. S.—"Mrs. E———, of a spare habit and fair complexion, twenty-two years of age, when about three months pregnant, was much frightened by the fighting of two dogs, which caused her at the time to faint, and for some time afterwards to suffer from great dejection of spirits. This continued to increase till the period of quickening, which she states she distinctly felt; after which she gradually improved in health. The abdomen increased in size, and she seemed likely to go the full period, till about the seventh month when slight hæmorrhage came on, with bearing down pains; this, however, was checked and removed by rest, and some slight aperient and saline medicines. The hæmorrhage did not return till the ninth month, and then slightly, when I was sent for, and finding pains, I proceeded to examine the nature of the presentation. This rather puzzled me, as I had never before met with a case at all similar. It appeared to consist of a considerable collection of vesicles connected together, but perfectly yielding.

"As the hæmorrhage abated after the patient laid down, I thought it most prudent not to interfere; and in the course of an hour, after very inconsiderable pains, a large mass of hydatids was discharged, and a great quantity of fluid.

"There was no hæmorrhage after delivery, and the patient did well. Upon examining the mass, I could find but a small portion of solid substance resembling placenta, the principal part being vesicles, the size of a hazel-nut, filled with fluid, and connected together in the form of grapes, the clustering of which fruit they much resembled. They weighed upwards of five pounds.

"The patient had had two children, with which she went her full time; and I can only account for this by supposing the ovum to have been blighted at the time of the fright by the dogs, which was, no doubt, at an earlier period than the patient states, as I could find no trace of fœtus or placenta beyond a portion, having somewhat that appearance, of the size of a walnut."—*Lond. Med. Repos. and Rev. Nov.* 1827.

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71. *Obstinate Vomiting during Pregnancy.*—M. Dance is of opinion that when during pregnancy, vomiting is protracted beyond the ordinary period, that it

arises from a morbid irritation of the uterus, which together with the membrana decidua, is in a state of inflammation. He has had an opportunity in two cases of testing this opinion by post mortem examinations, and found pus and coagulable lymph between the decidua and internal surface of the uterus, and other symptoms of inflammation. He recommends the employment of decided antiphlogistic measures, applied as near as possible to the uterus, and not to the stomach, which is only sympathetically affected.—*Repertoire Général, No. III.*

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72. *Cæsarian Operation.*—Two cases are given in the fifth vol. of the *Journal des Progrès*, in which this operation has been performed with success. The first at the hospital at Florence, on a woman of twenty-three; this was executed in the usual manner, the woman was perfectly cured in thirty days, the child was dead.

The second was performed by Dr. Solera, of Padua, on a woman of thirty-eight; this case being extremely interesting we have extracted it entire.

Mrs. J. B. aged thirty-eight, of a good constitution, conceived for the first time, five months after a second marriage, and shortly after having taken the sulphurous baths at Aix in Savoy. The pregnancy presented nothing that was remarkable; on the morning of the 2d of May, 1825, labour pains came on, Dr. Solera, professor of clinical surgery in the civil and military hospital of Padua, was called in; he found on examination that the orifice of the uterus was completely obliterated, and presented no trace of an opening. Drs. Ballardi and Villani were called in consultation, and confirmed the fact—it was also found that there was no obliquity of the uterus, which might have deceived them in the examination, the head of the fœtus was felt above the superior strait, and as the pains continued, they resolved to wait until the next day before deciding on any operation, in the hopes that the uterine contractions would determine a natural opening in the neck of the womb. The patient was twice bled, emollient injections given, and fomentations applied on the vulva and abdomen. The patient passed a bad night, her urine flowed involuntarily in small quantities, and as the abdomen was much distended, the catheter was introduced.

On the next day, Drs. Cristofori, Fortini, and Ottoni, were also called in, and no change having taken place in the patient, it was determined to recur at once to an operation, for fear that a rupture of the uterus should take place, and its contents escape into the cavity of the abdomen. All the physicians were of opinion that the vaginal incision should be resorted to instead of that through the abdomen:—1. From the danger of inflammation of the peritoneum and escape of the waters into the abdomen in the latter operation. 2. From the necessity there would be after the extraction of the fœtus and secundines, of a new operation to give an issue to the lochial and menstrual discharges—yet the ossification of the coccyx with the sacrum, which existed in this case, contracted the antero-posterior diameter of the lower strait about half an inch, rendering it doubtful whether the fœtus could be expelled without recurrence to the forceps. But the accoucheurs did not regard this circumstance as an insurmountable obstacle, and the operation was decided on and performed on the 4th of May. The instruments consisted of a bistoury, similar in its form and size to the hysterotome of Flamant, that is, it was convex, rounded and cutting only at its extremity for about an inch and a half, another bistoury with a narrow strait and pointed blade wrapped with linen, to within a short distance of its point, a third bistoury also narrow, but probe-pointed, and a little convex on its cutting edge. The patient was placed on the edge of a sofa, her head and shoulders slightly elevated by pillows, her feet resting on two low chairs, the operator standing between her thighs, introduced the index finger of the right hand to examine the state of the uterus, and the precise spot for the incision, afterwards having placed on the inside of that finger the rounded and convex bistoury, he introduced it into the vagina, but as the finger could not cover completely the surface of the blade, and thus prevent the lesion of the surrounding parts, the operator relinquished this instrument and made use of the narrow and pointed bistoury, with this he made in the vagina a transverse

incision of an inch and a half in length, and afterwards through the body of the uterus, the third incision divided the membranes, and gave vent to a turbid discharge, an assistant now raised the head of the fœtus above the pubis, and the operator with his left hand carried it as far as possible upwards—the incision was now enlarged with the probe-pointed bistoury, to two inches and a half in diameter, the labour pains soon expelled the head of the fœtus through this opening, the birth was now left to the efforts of nature, the pains continued violent, and during the morning the head of the child had advanced much, towards evening however they became feeble, and at long intervals, till finally the uterus became powerless. The next morning they were obliged to remove the child by artificial means—after the extraction of the child, which had died before the operation, the placenta was removed, and injections thrown into the cavity of the uterus. The lochia appeared, and flowed by the artificial opening. Thirty days after the operation the patient was doing well, and the opening of the uterus, which was at first a little to the right, occupied the natural position—the patient shortly afterwards perfectly recovered.

MEDICAL JURISPRUDENCE.

73. *Poisoning with Monkshood.*—"A family in the neighbourhood of Lille were poisoned by this plant, in consequence of its roots having been mistaken for those of the *Ligusticun livisticum*, a species of lovage. An old woman had been in the frequent custom of drinking a tincture of the latter plant as a cordial and remedy for pectoral ailments, and usually prepared it herself. One day her complaint being more troublesome than usual, she took an ounce before supper, another after it, and half an ounce more at midnight. She died in the course of the night. Not long afterwards, three individuals in the family drank each of them an ounce of the old woman's cordial which she left behind her. They were all taken ill in the course of half an hour. One of them had inexpressible anguish, and sense of burning in the throat and stomach, vomiting, purging, tenderness of the epigastrium and cholic, afterwards delirium, manifesting itself in loud cries and violent running; but emetics and emollient drinks calmed his sufferings, and in two days he recovered. Another man of weaker habit of body began to stagger, and appeared intoxicated, then was seized with violent vomiting, purging, and acute cholic pains, and he died in two hours. The third, a young female, complained of a sense of burning and enlargement of the tongue, and then of burning along the gullet down to the abdomen; she was soon after attacked with shivering, swelling of the face, vomiting, purging, and violent cholic, and she died in a state of great agitation, two hours and a half after drinking the cordial. The bodies were examined, and the only appearance of note was great redness of the inner membrane of the stomach and small intestines. A medico-legal examination having been ordered, M. Degland, physician at Lille, discovered that the tincture had been made of the fresh roots of the Aconitum napellus."—*Journal de Chim. Méd. July*, 1827.

74. *Extraordinary Suicide.*—"A Silesian butcher, who had for some time laboured under severe depression of spirits, surprised his wife in the very act of infidelity with one of his men. The effect was such as to drive him to a state of extraordinary distraction, in which he dashed his head several times against a wall; but finding that this did not accomplish his intention, he seized a cleaver, and struck himself repeatedly with the utmost violence on the forehead with the edge of this instrument, until at length he fell dead from loss of blood, and the violent commotion of the brain. It is conjectured, that he must have inflicted a hundred wounds upon himself before he effected his purpose.

"The outrage was committed in the presence of persons who were able to

testify as to the nature of the case; but had this person's dead body been found, with marks of violence such as it bore, the conclusion, (in the absence of evidence,) must have been, that the murder had been inflicted by the hands of another person, and in all probability suspicion would have fallen upon the adulterer."—*Lond. Med. Repos. and Rev. July*, 1827.

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75. *Rupture of the Bladder.*—M. Cloquet reported to the Royal Academy of Medicine, the case of a man, who, in wrestling, received a blow immediately above the pubis, from the knee of his antagonist. Severe pain, and suppression of urine followed; the catheter brought away only a small quantity of bloody fluid. The patient survived to the ninth day with all the symptoms of intense peritonitis. Dissection revealed a fissure at the fundus of the bladder, the peritoneum inflamed, and urine in its cavity.—*Archives Gén. July*, 1827.

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76. *Death from Inanition.*—An Italian writer has lately given the differences in a medico-legal point of view presented in individuals who have died of hunger, or only from inanition, (giuno.) Extenuation of body and general wasting of the form are common to both; in both cases also we find the mouth and tongue arid and dry, but in death from hunger the tongue is blackened, and as it were scorched; in both also the œsophagus, stomach, and intestines are contracted, all the viscera diminished in volume as are also the sanguine and lymphatic systems—but in cases of death from hunger, the stomach and first intestines are inflamed, and often gangrenous, which is never found where death has been caused by fasting. After death from hunger, the membranes and brain are often found in a state of inflammation, this does not take place in inanition; in the latter case also the muscular fibres and most of the tissues have a silvery tint, whilst in the former they are covered with extravasations of an acrid, tenacious, black liquid; the bile is thick, and is sometimes found in large quantities in the intestines. Finally, the bodies of persons who have died of inanition putrify much less rapidly than in cases of death by hunger.—*Journal des Progrès, Vol. V. from the Annali Univ. di Med. Milano*, 1827.

CHEMISTRY.

77. "*Rheine, a peculiar Substance in Rhubarb.*—M. Vaudin treated one part of rhubarb with eight parts of nitric acid at 36°, (Baumé,) with a gentle heat and then reducing it to the consistence of a syrup, and diluting it with water, he observed that a peculiar substance was precipitated which he has denominated Rheine, and which has the following properties when dried:—It is of a yellowish orange colour, without any peculiar smell; its taste is rather bitter, and it is almost entirely soluble in alcohol and ether: these solutions become yellow by acids, and of a rose-colour by alkalies. Rheine burns like other vegetable bodies, especially starch. Rhubarb treated directly by sulphuric ether yields a perfectly similar substance: this proves that the new substance exists already formed in the rhubarb, and that it is not acted upon by the nitric acid." —*Journ. de Chim. Med.*

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78. *Test for the Presence of Nitric Acid.* By Dr. Liebig.—"The following method is one devised by Dr. Liebig, for the detection of this substance, which it will effect, he says, when there is not more than a four-hundredth part of the acid present. The liquid to be examined must be mixed with sufficient sulphuric solution of indigo to acquire a distinct blue colour, a few drops of sulphuric acid added, and the whole boiled. If the liquid contains a nitrate, it will be bleached, or, if the quantity is very small, rendered yellow. By adding a little muriate of soda to the liquid before applying heat, a five-hundredth of nitric acid may easily be discovered."—*Ann. de Chimie.*

79. *Fallacy of Infusion of Litmus as a Test.* By M. MAGNUS.—"When pure water is heated for a sufficient time with infusion of litmus, reddened by an acid, it restores the blue colour. It is supposed that the heat gradually causes the free sulphuric acid, which had occasioned the reddening, to combine with the excess of alkali contained in the infusion, and thus to cause the restoration of the blue colour. Hence this preparation cannot be used to test the presence of ammonia in a solution, as water alone produces the effect anticipated from the alkali. The earthy salts contained in ordinary water also produce this effect."—*Journ. de Pharmacie.*

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80. *Analysis of the Bile.* By Professors TIEDEMANN and GMELIN.—Professors Tiedemann and Gmelin have analysed the bile with great care, and have discovered many organic principles, and proved it "to be the most complex of all the animal fluids. They agree very nearly with Thenard as to the saline ingredients, and also with Chevreul as to the presence of cholesterine, which they appear to have detected about the same time as that chemist, and without being aware of his discovery. But they have found the picromel of Thenard to be a compound substance, consisting of resin of bile and a crystalline principle which has a very sweet and slightly bitter taste, like liquorice, possesses all the properties of sugar, except that of fermenting, contains azote, resembles very exactly the sugar of gelatin procured by Braconnot on treating isinglass with sulphuric acid—and is one of the constituents of the bile which has the property of rendering the resin soluble in water. They have allowed it to retain the name of *picromel.* Sugar of bile would have been a more appropriate term.

"The next addition they have made to the analysis of the bile is the discovery of a principle resembling the asparagin found by Vauquelin and Robiquel in the asparagus. When pure it is in the form of colourless crystals, which are six-sided prisms, terminated by four or six-sided pyramids. They are soluble in about sixteen parts of temperate water, insoluble in pure alcohol, very soluble in nitric acid, but without undergoing any decomposition, fusible, and they have a peculiar fresh taste. The *Biliary asparagin*, as they have called it, is another substance, which, like picromel, renders the resin soluble in water.

"Besides the principles already mentioned, Tiedemann and Gmelin have also found in the bile the mucus of the gall-bladder, casein, albumen, gliadine, or that part of gluten which is soluble in alcohol, a little osmazome, oleïc acid, margaric acid, acetic acid, and a new acid, the *cholic acid.* They have, likewise, found that the soda contained in it exists in the state of bicarbonate, that there is also a little ammonia, and that there is no sulphuretted hydrogen in it, as Vogel has supposed. Lastly, they infer that it contains a peculiar colouring matter, because re-agents act on bile in the same way as on the colouring principle of biliary calculi; but they have not been able to separate it.

"The *cholic acid* is procured from the alcoholic extract of bile in the form of acicular crystals. It is distinguished from other acids by a sweet taste. In its properties it resembles the uric, pyro-uric, and purpuric acids, but it has a stronger affinity for bases.

"On the effects of re-agents on the colouring principle of the bile, they have made some interesting observations, from which we shall select, as furnishing the best practical test of the presence of bile, the changes caused by nitric acid. When nitric acid is added in small successive portions to bile of every kind, it causes first a green, then blue, next violet, and lastly a red coloration, which becomes yellow on standing, or on the addition of a large excess of acid.

"The bile, therefore, appears to be an exceedingly complicated fluid. Besides saline ingredients of the inorganic class, it contains mucus, albumen, osmazome, gliadine, caseïn, picromel, asparagin, acetic acid, oleïc acid, margaric acid, cholic acid, resin, and colouring matter."—*Ed. Med. and Surg. Journ. Oct.* 1827.

MISCELLANEOUS.

81. *On Vaccination Repeated on the same Individuals.* By Dr. Dornbluth.—In thirty-four children, aged from one to thirteen years, and who had good scars from vaccination, a second vaccination did not produce a true pustule in one. They had only papulæ, if we except a child five years of age, who had been properly vaccinated two years before, and in whom a pustule was developed similar in its progress from the third to the eighth day to that of the vaccine, but it was more transparent, bluish, had an imperfect areola, and dried promptly on the ninth and tenth days. If we except a small papulæ in an infant who had been formerly vaccinated, no effect was produced in individuals, some of whom had been, and others of whom had not been vaccinated, who were vaccinated with the lymph of this pustule.

The results of a third vaccination of fifty individuals did not differ from those of a second; they were the same also from the reiterated vaccination of adult subjects who had been properly vaccinated twelve years and upwards before. Two of these individuals had pustules very similar in every respect to true vaccine, but they left no scar. Dr. D. has not ascertained whether the lymph of these pustules will produce a good vaccine pustule. Of two hundred and thirty-four who had been previously vaccinated, a pustule was produced in three only by a second vaccination.

Vaccination performed in sixteen persons who had had the natural or inoculated small-pox from fifteen to forty years before, produced only papulæ more or less ephemeral in their duration, in ten; in four there were false vaccine pustules, finally two others had pustules which could not be distinguished from true vaccine. Persons who had been previously vaccinated, or who had had the small-pox, on being vaccinated with the lymph from one of these individuals, had no pustules; but a child vaccinated with the lymph from the other individual took the vaccine and a pustule was produced which might serve for a new vaccination.—*Bulletin des Sciences Médicales for July*, 1827, *from the Journ. des Prakt. Heilkunde, Nov. and Dec.* 1826.

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82. *Account of a Varioloid which prevailed in an Establishment for Instruction at Berlin.* By Dr. Stosch.—This disease was brought into the institution by a young man, sixteen years of age, who came fifteen days before from Colberg, where the small-pox and varioloid prevailed. His disease had all the characters of true small-pox, although he had a vaccine cicatrix on one of his arms. In the space of two months and a half, forty pupils were successively attacked with the disease, which in some appeared in a mild, but in others in a most violent form, presenting all the appearances of small-pox; in others again it assumed all the intermediate grades of violence. All the individuals affected had been vaccinated in their infancy. No constant relation could be observed between the number and form of the vaccine cicatrices and the violence of the disease, some individuals with perfect cicatrices being affected in the most violent manner, while others with irregular and imperfect cicatices had it much milder. All those affected were between the ages of fifteen and eighteen years, and among these the oldest had the disease most violently.

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83. *Pharmaceutical School of St. Petersburgh.*—This school, which has existed since 1822, has recently, by the generous patronage of the minister of the interior, been endowed with a botanical garden, which soon will rival the finest and most complete of the kind in Europe. It was planned by M. Fischer, one of the greatest botanists in Russia, who is now director, and is the same who arranged the fine garden at Varinha, in the neighbourhood of Moscow. The garden at St. Petersburgh already reckons upwards of eleven thousand species and eighty thousand single plants.—*Foreign Quarterly Review, July*, 1827.

84. *Insanity.*—Dr. G. Lostritto, Physician to the Insane Hospital at Aversa, has given an interesting summary of the cases admitted into that institution from 1814 to 1824. He states that one thousand seven hundred and twenty-five patients were received during the ten years, of whom the greater number were in 1822–23, arising from the revolution and popular commotions at that epoch. In general there are more insane patients in the summer months—this agrees with observations made in Paris and London; as to age, the greatest proportion of cases occur between the twentieth and thirtieth years, and particularly at the latter. In Naples, males are more frequently the victims of insanity than females—this remark is also applicable to all Italy and Spain. In Naples insanity is frequently the consequence of febrile diseases, particularly of intermittents; but in general is attributable to moral causes. Monomania is the most frequent; from one thousand four hundred and thirty patients, seven hundred and eighty-three were monomaniacs. Dr. Lostritto has found that general maniacs were more readily cured than any of the other species, being about three in ten in men, and five in seventeen in woman; he also observes that more recoveries take place in April than in any other part of the year.

The relative mortality of the sexes is about equal, and the general mortality about one-fourth. The general causes of death at the hospital at Aversa are dry gangrene, exanthematous fevers, and cachectic disorders.—*Journal des Progrès, Vol. V.* 1827.

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85. *Medical Statistics.*—Proportion of births. In Leghorn the proportion of births to the inhabitants are one in twenty-six—in Paris one in thirty—in London one in thirty-two—in St. Petersburgh and Copenhagen one in twenty-one. It also appears that the greatest number of births occur in January and March, and the fewest in June and August.—*Journal des Progrès, Vol. V.*

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86. *Pulmonary Abscess.*—Dr. Chambers asserts, in the *London Medical and Physical Journal*, for September, 1827, that during the fifteen years that he has been physician to St. George's Hospital, the number of deaths from pulmonary disease has amounted to above six hundred, and that the bodies of all these persons, with a very few exceptions, have been carefully examined after death, and amongst them, according to the best of his recollection, there have been found only three cases of pure phlegmonous abscess in the lungs. During this period also, many individuals with diseases of the lungs, have left the hospital, after receiving various degrees of relief; amongst these, three or four instances of pulmonary apostema have perfectly recovered. So that out of many hundred cases of pulmonary disease, not more than six or seven have occurred of true phlegmonous abscess; of which it may be remarked, that at least one-half terminated favourably.

AMERICAN INTELLIGENCE.

Notice of the Influence of Mercury in the production of Hepatic Affections. By N. CHAPMAN, M. D.—In a short essay on jaundice, in the last number of this journal, I omitted, in the enumeration of the causes of this disease, the influence of mercury. That the inordinate use of this mineral, may in various ways derange the primæ viæ and liver, so as to produce the icterose affections, seems to me highly probable. Many years ago, I saw an inveterate case of jaundice developed, during a protracted salivation for syphilis, which I attended in consultation with the late Professor Wistar—and within the last few months, I was consulted in a second case of it under the same circumstances, in neither of which instances, was there any reason to suspect, any previous disorder of the chylopoietic viscera. But doubting whether these were coincidences or effects, they attracted little attention at the time. More importance, however, do I now attach to them in this view, from having subsequently met with similar instances, reported by a distinguished writer. Cheyne, to whom I allude, states,* "that it does not appear to be generally known, that mercurials actually produce jaundice, though it is a fact of which I have seen, within the last two years, three striking examples." The history of these cases agrees in all essentials with that of those which occurred to myself.

It is somewhat remarkable that this fact should not have been earlier applied by me, since for several years, I have taught in my lectures, that the extravagant employment of mercury by many of our practitioners, in autumnal fever, and other diseases, must be assigned as one of the causes for the general prevalence of chronic hepatic affections in some portions of our country. Even drachm doses of calomel and copious inunctions, repeated several times in the day, constitute the practice, as I have understood, of the ultra mercurialists—and, though others do not urge it so far, there is abundant reason to suspect the too common abuse of this remedy.

More than any agent whatever, has mercury the power of exciting the action of the liver, and it is a law of our nature, that all high excitement is followed by a correspondent degree of debility. Adverting to the unparalleled application of the article in the cases mentioned, it seems to be no unreasonable supposition, that the hepatic apparatus, thus over-stimulated, should fall into collapse, and in this state of exhaustion, languor shall take place in the portal circulation, productive of congestion, eventuating in induration or more serious disorganizations. Exactly in this way, do miasmata, high temperature, and the habitual consumption of ardent spirits, operate to the same effect. Called upon to explain the modus agendi of these baneful influences, such a course of reasoning, would probably, at least, be instituted by most of the profession.

In further support of this hypothesis, I have learnt from the venerable Dr. Somerville, of the south of Virginia, who has practised medicine in that section of the country for nearly half a century, that till the enormous introduction of mercury in the treatment of autumnal diseases, hepatitis was hardly known, and since, it most widely prevails. Not a few confirmatory statements have I received from my correspondents in other parts of the United States, so that the fact seems pretty well established.

Let it not, however, be imagined, that I am opposed to the use of mercury in the diseases to which I have alluded. Great confidence, on the contrary, do I

* Dublin Hospital Reports, for 1818.

place in it, and especially in the hepatic affections. It is against its abuse I protest, and here I cannot forbear to express the opinion, that in all cases where its specific impression is desired, that the end will be more effectually attained by minute doses of it—and I am equally certain as an evacuant, too largely administered, our purposes are frustrated by the ultimate overwhelming of susceptibility, leaving the alimentary canal and liver, in the torpor of indirect debility, or inducing a pernicious state of irritation, or positive phlogosis, with an irregular febrile movement.

Its salutary effects may perhaps, under all circumstances, be mainly ascribed to the promotion of the biliary and other secretions, and failing to do this, it proves inert and unavailing, or causes such a train of deleterious consequences as above indicated. In the management of chronic diseases of the liver of every description, these are considerations which should invariably control its use, continuing or discarding it, according to the mode in which it affects the system. Numerous are the instances which I have seen of hepatitis, as well as of jaundice, in which the condition was most conspicuously deteriorated by a neglect of these practical maxims, and some, where irreparable mischief was entailed by a lengthened perseverance in this mistaken course. It will sometimes happen that mercury proving inappropriate or useless, the nitro-muriatic acid exhibited internally, and applied externally by frictions or as a bath, may succeed. But a more extended view of the subject would lead me into details inconsistent with the limits of this note.

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Notice of the Efficacy of Tobacco in Cynanche Trachealis. By N. Chapman, M. D.—Two years ago I was called to visit a lady in croup, whom I had frequently attended before in attacks of the same disease. Having used the ordinary remedies to a great extent without any decided impression on the case, it occurred to me that relaxation of the spasm of the larynx, which evidently existed, might be induced by tobacco, and accordingly directed the smoking of a cigar. Nausea was created in a few minutes, and I had the satisfaction to witness a subsidence of the affection, followed by an entire cure, without the interposition of any other means. Delighted with the efficacy of this very simple remedy, she has since exclusively relied on it, and in all the attacks of the disease, which have been numerous, for she is hardly ever exposed to its causes without suffering in this way, she has found it equally successful.

Every case of spasmodic croup which has subsequently come under my notice, has in the early stage to which I consider the tobacco only applicable, so readily yielded to the common measures, that I have had no occasion to give it a further trial. But in several instances of the same condition of asthma I have used it with great advantage.

Much discussion has taken place relative to the pathology of croup, whether it be of a spasmodic or inflammatory nature. It is probable that whenever it suddenly comes on, it must be essentially of the former character, as some time is required to induce phlogosis, which is the result of a much slower process. No cause, however, more rapidly promotes it than spasmodic constriction, and hence no long period elapses till inflammation becomes established. That such a view is correct, seems to be confirmed by the symptoms, the treatment, and the post mortem appearances in these cases.

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Case of Tetanus successfully treated with Arsenic. By Wm. J. Holcombe, M. D. of Lynchburg, Virginia, communicated in a letter to Professor Chapman.—"Believing any thing connected with the treatment of disease will not be uninteresting to you, I take the liberty of sending you the following history of the successful termination of a case of tetanus. It was my intention to have given you this statement much earlier, but have deferred it, with the view of further testing the efficacy of the remedy, but not having met with a case of tetanus since, I have determined to communicate it to you, as it affords additional evi-

dence in favour of the powers of arsenic to control spasmodic action. I extract the case, from the notes taken at the time it occurred.

March 14th. 1820.—I was this day called to visit a patient. He was a remarkably strong, robust negro man, about twenty-five years old, and had always enjoyed good health. About two weeks ago, as he was walking across the floor in his stockings only, he stuck a common brass pin into his heel. He felt no inconvenience from it at the time, and conceived the injury to be of no consequence. A week after the occurrence, he felt some uneasiness in the heel, but not recollecting at the time, of having pricked it with a pin, the week before, he concluded it was the beginning of an affection, frequently occurring, among negroes accustomed to go barefooted, commonly designated *stone bruise*. It gave him much pain, and his mistress directed a common poultice to be applied. After continuing the poultice two days, it appeared as if there was a collection of matter formed. It was opened, but instead of matter, a small portion of a thin yellowish fluid was discharged. He became worse, some symptoms of lockjaw having supervened, and I was requested to see him. When I entered the room, I found him in a strong spasm. I inquired if there was no wound about him. The attendants answered, (to use their own language,) that he had a stone bruise on his heel. Upon examination, I found the heel somewhat swollen, with a small elevation covered with a very thin skin, under which there appeared to be a collection of fluid. I divided the skin with a lancet, and a few drops of a semi-transparent fluid escaped. The wound though small, was of a greenish colour on the outer margin, and the centre was of a pale whitish and flabby appearance. It was not larger than a quarter of a dollar; the pain in the foot was excruciating, and extended up the thigh, from thence to the muscles of his back which were very much contracted, producing a great degree of curvature in the spine. The muscles of his neck and jaw were very much affected during the continuance of the spasms, throwing the head backwards and clenching the teeth together. The muscles of his abdomen were likewise very rigid, and to use his own expression, " there seemed to be a constant pulling at his heart." These spasms were not constant, but occurred every half hour, and continued about five minutes, after which he was comparatively easy until they returned. His pulse was rather small and frequent, affording but little resistance, upon pressure, to the fingers. His skin rather below the natural temperature, he had no thirst or any other symptom indicative of febrile action. Being fully satisfied that it was a genuine case of tetanus, I made two deep incisions crossing each other in the centre of the wound. I then with a probe, filled the incisions thus made, with lint wet with spirit of turpentine, and directed that the whole surface of the wound should be kept moistened with the same. I ordered a blister to be applied, covering the foot and extending upon the leg above the ankle. I then directed ten drops of Fowl. sol. arsenic, combined with fifteen drops laudanum in a little water, every two hours; also one grain of calomel upon the intervening hours.

15th.—I found the spasms recurred not so frequent, but equally as severe as they were yesterday. The blister drew well—the wound had lost its greenish colour, and now appeared red. No matter discoverable—pulse and skin as yesterday—no evacuation from the bowels. Prescription the same.

16th.—Has had but few returns of the spasm in the last twenty-four hours. The wound begins to matter. The calomel has operated twice. His pulse fuller and softer, and more regular. Complains of some heat about the stomach, and has some thirst. Skin warmer than natural, with slight moisture about the head and chest. Spirit of turpentine to the wound—eight drops arsenic—ten laudanum every third hour through the day. One grain of calomel every third hour.

17th.—Still continues to mend. No return of spasms since I last saw him. The wound matters freely. Pulse regular. Bowels open. Calomel has not

Plate 2 vol. 1.

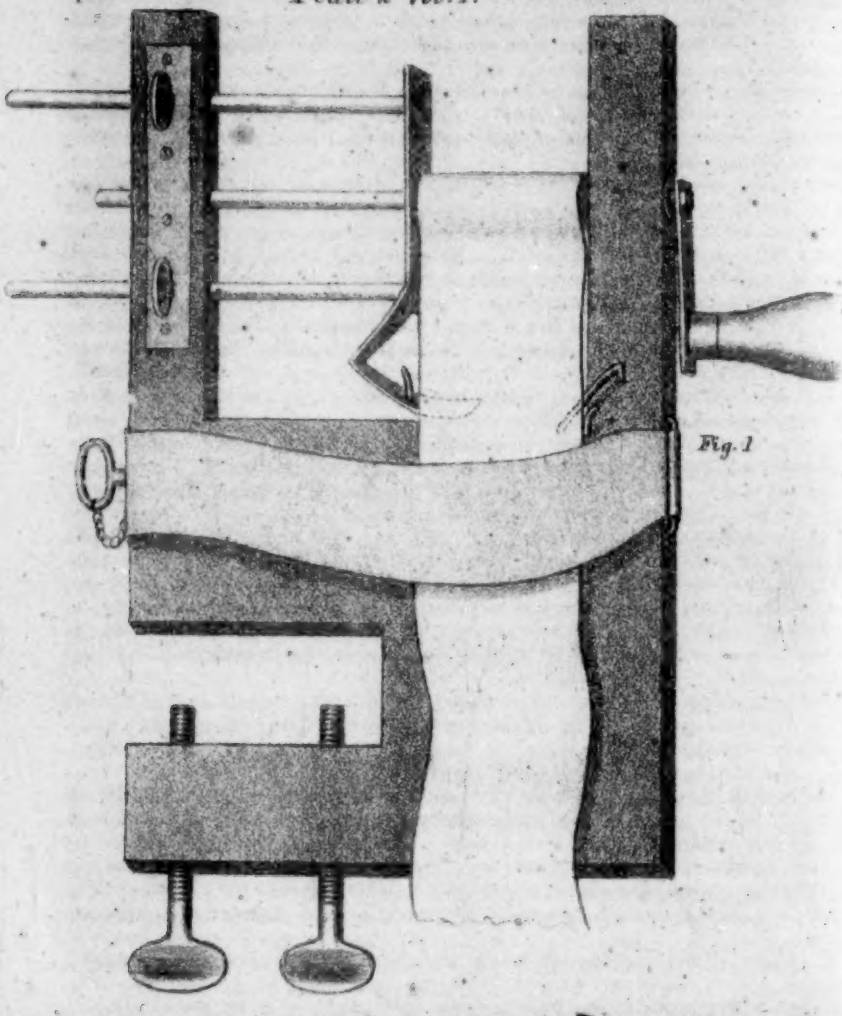

Fig. 1

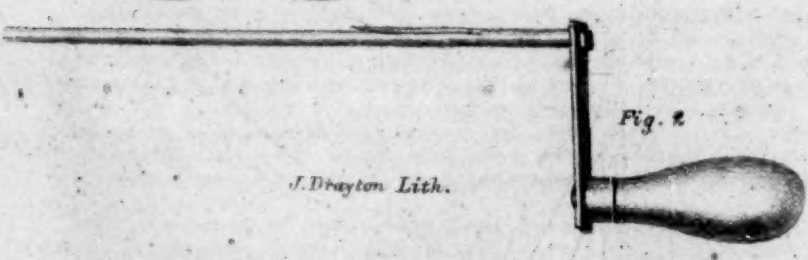

Fig. 2

J. Drayton Lith.

affected his mouth. Skin hot. Some burning in the stomach with a good deal of thirst. Directed simple cerate to the wound—five drops arsenic, and eight of laudanum, every eight hours. Calomel discontinued.

18*th.*—No return of spasm. No pain. Pulse regular—skin pleasant. Some thirst. Burning about the stomach not so great as yesterday. Wound healthy. Directed moderate dose calcined magnesia. Other remedies discontinued.

19*th.*—Medicine operated twice, and patient doing well, with some appetite to-day for animal food, for the first time. Directed his bowels to be kept open with magnesia or some of the neutral salts. In a short time he commenced his usual labour.

The above case of tetanus is one of the few, within my knowledge, that has terminated favourably when arising from a wound. Whether the cure is to be attributed to the arsenic alone, future experience must determine. It appears at least to deserve particular attention, as no remedy should be neglected that promises any benefit in this truly alarming disease. What share the blister may have had in relieving the patient, I am unable to determine, but it seems from his speedy amendment, that it may have contributed in good measure to relieve that peculiar nervous irritability upon which the disease depends. The particular manner in which the arsenic operates is not very intelligible, for in this case there was some amendment before the patient complained of any burning about the stomach, but the spasms did not subside entirely, until that symptom was developed. I am induced to believe that it operates by producing a stimulating effect upon the stomach, and extended by sympathy to all the muscles affected. I think I am warranted to draw this inference from the fact, that so soon as this patient complained of a sense of heat at the pit of the stomach, the skin which was before rather cooler than natural, became warmer, with a slight disposition to perspiration. It is worthy of remark in this case, that the calomel produced nothing like ptyalism, and if of any benefit, must have been simply as a cathartic. The particular manner of its operation is only interesting as a subject of speculation, but that it may be made, (to say the least of it,) a valuable auxiliary in the treatment of this formidable disease, I am fully satisfied."

Dr. Taylor has communicated to Professor Chapman some cases of tetanus cured by the arsenic. Vide Elements of Therapeutics, by N. Chapman, M. D. &c. Vol. II. ed. V. p. 477.

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Description of a Bandage Roller, with some Remarks on Bandages. By W. E. Horner, M. D. &c. [With a plate.]—The annexed print represents a small machine for rolling bandages, which I have employed for several years in my private business. Its advantages are the celerity of its operation; and the smooth, hard, regular and cylindrical form which it gives to the bandage, all of which conditions are indispensable for its application with neatness and precision.

A glance at the drawing will make the reader understand that the machine consists in a windlass, and a frame-work upon which the latter revolves. The windlass represented by fig. 2d, is a cylindrical wire of three lines diameter, with a slit an inch and a half long sawed in it near the handle, for fastening the end of the bandage. The complete machine is seen in fig. 1st, with a bandage adjusted for winding up. In the lower part of fig. 1st, is a notch with two vertical screws for fastening on the edge of a table. To the left of the bandage is seen a rack which may be slid inwards or outwards so as to be adjusted to a bandage of any width from half an inch to six inches, when adjusted it is retained in its position by screws pressing upon its horizontal bars.

Above the notch is a transverse band, moving upon a joint on the right side, and fastened by a pin at the left. The band is made of sheet-brass, and its object is to increase the friction of the bandage by crossing and pressing upon

it as it is rolled up; its inferior margin is a paraboloid curve which assists most materially in spreading out the bandage from the middle to the edges, and taking out of it any wrinkles. The edges of the bandage are kept stretched and smooth between the strap and the windlass by two arms, one on each side; that on the left is connected with the rack, and moves with it; that on the right is fixed to the frame; they have the effect of giving to the bandage as it goes up to the windlass the shape of a line with the ends advanced ⌐¬ which seems necessary to communicating smooth uniform extremities to the roller as the winding is proceeding.

The frame of this machine is thirteen inches in its long diameter, and eight in the short one; it is made of mahogany, and strengthened by brass braces at the places where it is subject to a strain, as at the angles of the notch and at the screws for fixing the rack. Its portable size, and the facility with which it may be fixed to any common table, make it a very convenient instrument in all dressings requiring a succession of long bandages, as in fractured clavicle, and in varicose veins of the leg. A roller, ten yards long, and in the most wrinkled state, is wound up smooth in a very short time. When the roller is to be detached from it, one or two reversed turns of the windlass frees the internal end of the bandage, and then the windlass may be easily drawn out from it.*

While on the subject of bandages I may be permitted to state that it is a very great improvement on them in many diseases, and especially where it is desirable that the limb should be well supported, and not cramped, as in varicose ulcer, for the bandage to be cut *bias*, so called by the seamstress, or diagonally. Common muslin answers perfectly well, and the division of it should commence by turning down one corner to the full length of the square. The true diagonal line being thus obtained, it may be cut up into parallel strips. The selvage ends of which being sewed successively together will make a bandage of any desired length. In cutting out the strips, allowance should be made for their narrowing about one-third upon being first stretched. For example, if a bandage of two inches is wanted, it should be cut originally three, and so on of other dimensions.

The elasticity of this diagonal bandage and its comparative comfort may be tested in a few minutes by any one who will have one arm tightly wrapped by it, and the other by the common rectangular bandage. I have frequently reconciled people to it who could not be persuaded to the permanent use of any other; and in addition to other advantages, it holds its place better, does not press at the edges, and does not ravel. The repeated advantages that I have derived from it in varicose veins induces me to recommend it to the profession as well worthy of attention.

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Case of Twins, by A. Delbon, of Camden, S. C., communicated in a letter to Dr. Hays.—The following case may not prove altogether unacceptable, it did not fall under my immediate observation, I am indebted to my intelligent friend, Doctor E. H. Anderson of this place, for the facts and the preparation which he had the kindness to send me.

A healthy wench, aged about twenty-three years, was taken in labour at the full period with her third pregnancy. The pains were regular and effective, the vertex presenting; on the membranes giving way, the head engaged in the superior strait, where it was delayed; the uterine contractions increasing in frequency and severity without advancing the head, alarmed the "old woman," her fears were augmented on discovering a round body in advance of the vertex, which she concluded "was attached to the head," and from which she drew the most awful presages and sent off for assistance. This truce, no doubt, spared the uterus much unnecessary violence, and being let alone, (be-

* This machine is made by Mr. Schively, surgeon's instrument maker, of this city, to whom the pattern has been communicated.

fore my friend arrived,) it expelled, unassisted, a large healthy child, and with it, a blighted fœtus, its membranes and placenta. The secundines of the living child soon followed. Was this a twin case, the product of the same conception? Was one of the fœtusses blighted in the earlier months of gestation and retained to the full period, without affecting the healthy action of the uterus? —It might be contended, that this was a case of superfœtation. The description of the preparation and appearances on delivery will dispel this conjecture, at all events it will go to prove that it had been long retained after its destruction, by a passive consent of the uterus, for during the whole period of utero-gestation there had been no effort at expulsion.

The following appearances presented: The colour of the fœtus, dull yellow; structure soft; cuticle and muscles easily torn on being handled; length from the posterior fontanelle to the heel, eight inches; length of the trunk, four inches; depth of the thorax, four lines; right parietal bone, trunk and extremities, flattened; left side of the head natural; extremities extended and elongated; posterior surface from the occiput to the heels, *firmly attached* to the investing membranes; superior extremities tied down to the sides of the trunk; internal organs soft and white; loose portion of investing membrane, natural; portion attached to the fœtus, dull yellow colour, firm, and dense: Placenta changed in shape and structure, tough, thick, and cellular; shape an irregular square; colour of exterior surface, bright yellow; interior, composed of strong bands running in various directions; meshes containing dark coagulated blood; the inner surface of the amnion and placenta, exhibited traces of recent circulation; umbilical chord soft, usual length, connecting the fœtus to the placental mass, of the dead colour of the fœtus; no smell of putrefaction, although examined several hours after expulsion. The flattened appearance of the fœtus bore the impress of long pressure, and was certainly not produced in its passage through the strait.

I am of opinion the destruction of the fœtus was completed, if not commenced, by the vigorous child impinging on its fellow, consequently checking by its pressure its further development, and at last destroying it. I hazard this conjecture from the fact, that adhesion could not have taken place between the fœtus and investing chorion without a fixed and steady contact, maintained by the increasing bulk of the living child—in proportion as the healthy fœtus continued to be developed was the pressure increased, producing irritation and ultimately, death; when the dead matter ceased to oppose its encroachment, it yielded as far as its form and structure would permit, hence the elongated and flattened appearance of the head and trunk, and extension of its limbs. The structural changes in the placenta, must have been gradual and progressive; it commenced with the early vicissitudes of the blighted fœtus, and when that refused its proper nourishment, it had no longer to perform an important function; and had to accommodate itself to the change—this it effected, but in what way it is impossible to determine; it continued to adhere to the uterus, and maintained a circulation, after the death of the fœtus it was destined to nourish.

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Case of Excision of a part of the Spleen. By W. B. Powell, M. D. of Ky. —In the latter part of May, 1826, J. F. was stabbed in the left side, about four hours previous to my seeing him. I found the wound covered with soot and flour, which the matrons present had applied to stop the hæmorrhage. The patient was quite ungovernable from inebriation. After cleansing the wound, I found nearly two inches of the spleen protruded through an incision that had been made between the second and third false ribs, about four inches anterior of the spine, by a knife or large dirk, directed downwards, inwards, and forwards, to the cavity of the abdomen. Upon inquiry, I learned that the individual had eaten, as well as drank, but a short time before the riot, to an intemperate extent. Having satisfied myself with regard to the nature of the protrusion, I intended to attempt its reduction, but was prevented by discover-

ing a slit in the protruded extremity, near one inch in length, which induced me to believe that such an act would endanger the patient's life from internal hæmorrhage; though but little blood followed the wound, in consequence of the stricture by the lips of the wound. Hence, as the night was considerably advanced, having no other light than that of a very indifferent lamp, the patient being intoxicated, and having no disposition to pass a ligature and amputate upon my own responsibility, I deferred doing any thing more until 9 o'clock next morning, when I was accompanied by Dr. Bennett, of Newport, Ky. At this time we both examined the case, and were satisfied that the protrusion consisted of one extremity of the spleen, in a high state of inflammation. In consultation, Dr. Bennett thought that we could institute no practice that would result in the recovery of the patient, from the complicated character of the wound, and the patient's habits of intemperance; hence, in his opinion, it was of no importance what was done, as he believed that death from peritoneal inflammation would ensue before the termination of the fourth day.

From my own views of the animal economy, the evidence of others, relative to operations involving the peritoneum, and my own experiments upon inferior animals, I was induced to believe that a more favourable result might be hoped for. The patient was about thirty years of age, possessing but little nervous irritability, and had not prosecuted his habits of intemperance to the production of organic, or even manifest functional disease; consequently, I considered his system as possessing strong recuperative powers.

With such views of the case, I prepared a ligature from a slip of a tendon, taken from a beef's hock that had been some time in brine, and passed it around the stricture formed by the external incision, and then amputated the protruded portion. I then attempted to make a perfect reduction of the spleen, but found it impracticable, without the use of injurious force, to get the amputated extremity of the spleen below the diaphragm, because of the great contraction of that muscle.

Believing, as I did, that his system was competent to the removal of that portion of the spleen contained above the incision made in the diaphragm, I did not hesitate to let it remain, as it was reduced within the thoracic parietes; hence, I closed the external wound, took a pound and a half of blood from his arm, put him to bed, prescribed light diet, and an absence from company.

On the third day his pulse, skin, &c. indicated an unusual degree of constitutional excitement, when I ordered tartris antimonii with the sal. soda, in small doses, and bread and milk poultices to the wound. On the fourth day healthy pus was discharged from the wound; this discharge continued three days, and then, (I suppose,) it was discharged internally, producing or followed by symptoms of peritoneal inflammation, which yielded to the administration of the above named medicines, with warm fomentations and evaporating lotions to the abdomen. After this he continued to improve, and on the fourteenth day was discharged from my care, though the wound was not entirely cicatrized. I saw him nine months after, when he informed me that the wound was perfectly healed, and that he enjoyed excellent health.

Case of Femoral Aneurism of the Left Thigh, and Popliteal Aneurism of the Right Leg, Successfully Treated. By VALENTINE MOTT, M.D. Professor of Surgery in Rutgers Medical College, New York.—L. P. about thirty years of age, having lived very freely, and suffered from a syphilitic taint, felt suddenly a painful sensation in the upper part of the left thigh, from a violent effort at lifting. A tumour immediately arose which was extremely painful, having the characteristics of aneurism. Some considerable time after this, upon drawing on his boot suddenly, and stamping his foot violently upon the floor, a popliteal aneurism was produced in the right leg.

The popliteal aneurism increased the most rapidly, but though urged to submit to the operation in the early stage, he would not consent until it was upon the point of bursting.

The femoral artery was tied at the usual place, and the next day a discharge took place from the tumour.

Fourteen days from this operation the external iliac very high up was tied for the femoral aneurism of the left thigh, it having suddenly become diffused during the preceding night, extending nearly up to the internal iliac, and giving the patient the most agonizing torture.

From the opening of the popliteal aneurism a large ulcer was left, which upon healing occasioned a slight contraction and lameness. In other respects his recovery was complete, and he now enjoys a better state of health than he has known for years.

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Gibson's *Improved Trephine.*—Professor Gibson, in consequence of having seen much mischief result from the practice of rasping the pericranium, and from the teeth of the saw of the common trephine when applied in the usual way, has had constructed a "trephine with a small moveable lancet attached to its outer surface, the extremity of which can be made to project about the sixteenth part of an inch beyond the teeth of the instrument. The object of this is to cut the pericranium instead of tearing it. As soon as this is accomplished, the operator may retract the lancet and proceed to saw the bone."—*The Institutes and Practice of Surgery, by Wm. Gibson, M. D. &c. 2d Ed.*

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Report of the Committee appointed by the Philadelphia Medical Society to inquire into the remedial value of the more prominent specifics now sold in Philadelphia.—The Philadelphia Medical Society have just published the very elaborate report of their committee appointed to inquire into the remedial value of the more prominent specifics now sold in Philadelphia. We have not room for the whole of this report, but we insert several of the more important of the documents obtained by the committee.

Letter from Professor Chapman.

Excepting "Swaim's Panacea," I have no knowledge of any of the nostrums to which you allude in your communication to me. Early in the history of that article, I was induced to employ it, as well from professional as common report in favour of its efficacy, and was well pleased at the result in several cases. But more extensive experience with it, soon convinced me that I had overrated its value, and for a long period I have entirely ceased to prescribe it.

As to its composition, I have satisfied myself, and by no equivocal evidence, that it essentially consists of a saturated decoction of sarsaparilla, with corrosive sublimate, and that it is an inferior preparation to the syrup de Cuisinier, principally constituted of these two ingredients, and which is now so much used in the practice of this city.

It were easy to point out, and indeed to demonstrate, the great mischief which has resulted from the indiscriminate employment of this nostrum, and I am in possession of not a few cases, which, if you wish them, are at your service, eminently calculated to alarm the public on this subject.

(Signed) N. CHAPMAN.

Philadelphia, Sept. 29, 1827.

Letter from Dr. Harris.

Though I have never prescribed Swaim's Panacea, yet I have witnessed the effects of its exhibition in diseases of various characters.

The first case was Mrs. E. who was affected with herpes exedens of the nose. The case had been under my care at different times for two years, during which period I succeeded in healing the ulcer several times. She afterwards resorted to Swaim's Panacea, with the effect of aggravating the ulcer, and of

producing an unyielding diarrhœa. It is now seven years since she placed herself under the care of Swaim, since which the ulcer has continued to increase in size. In this case the nostrum proved injurious to the local disease, and induced an impairment of the general health, from which she has never recovered.

Second Case.—Captain L. affected with indolent ulcers of the leg, took ten bottles of the Panacea without the slightest benefit.

Third Case.—Mr. K. a scrivener, afflicted with dyspepsia, applied to Swaim for relief. As might be anticipated, the Panacea was prescribed. After he had taken the second bottle he became salivated, and shortly afterwards appeared a mercurial eruption on his shoulders and face. Upon showing the eruption to Swaim, he expressed his satisfaction at its appearance, and added that his "medicine was driving the disease out through his skin." He encouraged his patient to persevere with his medicine until he had taken a few bottles more. The effect was an increase of the salivation, and an extension of the cutaneous disease, until it covered nearly the whole surface of the body.

After being under the influence of a profuse salivation for three months, which, besides producing mercurial ulcers, emaciated his body almost to a skeleton, he applied to my friend Dr. Mitchell and myself, for relief. We were unable, however, to render him any important service. The long irritation of the medicine brought on ascites, of which he died in a few months.

I have seen it applied in several other cases, but in no instance with the slightest advantage.

(Signed) THOMAS HARRIS.

November 8, 1827.

Letter from Dr. Randolph.

Owing to fortuitous circumstances, the celebrity obtained by various empirical articles now sold in this city, has been such, that in all probability, there is scarcely a single physician engaged in the practice of his profession, who has not had some opportunities of witnessing their effects. As our attention has been but so very lately officially drawn to this subject, I regret to state, that I cannot furnish you with any certified testimony of my knowledge of these articles, but as far as my own evidence will avail, it affords me great pleasure to comply with your request. In consequence of the panacea of Mr. Swaim having met with a more ready sale than many other similar remedies, (but with how much justice I do not pretend to say,) it has happened to me most frequently to have known this article administered. The diseases for which I have seen it given have been cases of cancer, scrofula, and bad ulcerations seated on various parts of the body; now for the cure of these complaints, I have known this preparation to be used for weeks, and months, and I do most conscientiously declare, that I have never known in a single instance a cure to be effected by it. That as an innoxious alterative it may have succeeded under circumstances where such remedies generally do succeed, particularly where active medicines have been pushed too far I can readily admit, but that it ever has effected a cure of either cancer or scrofula, under my own observation, diseases to which it is said to be particularly adapted, I certainly deny. With a view of explaining what I believe to be the mischievous tendency of quack preparations, and any adventitious aid given to their use, I beg leave to mention the following case, which came under my notice in February last. Mr. A. B. applied to me at that time, to know whether I could do any thing for the relief of a very troublesome discharge attended at times with a good deal of pain, which issued from the urethra, and which he supposed to be a gleet in consequence of a gonorrhœa which he had some years before. Upon inquiring into the symptoms of this case, I had no doubt that the cause of them all was a structure of the urethra, and accordingly I passed a bougie into that canal, which confirmed my suspicions immediately, the cure was accomplished

by the usual mode. During the course of treatment this person informed me that he had been under the care of several different empirics, and that he had expended a large sum of money in the purchase of a celebrated panacea. Upon my asking him how he could have committed so great a folly, he informed me that he was led to it by the respectable vouchers which he saw given to its proprietor; I soon satisfied him that this was not a case to which they considered the article applicable, and had to regret that they could not enable the public to discriminate between cases which they were of the opinion could or could not be benefited by its use. I have attended several cases in conjunction with Dr. Physick, of ulcerations and scrofula in which the panacea had been largely administered. The sentiments of Dr. Physick respecting the use of empirical preparations, are now I imagine, generally known; his opportunities of witnessing the result of their employment have been, perhaps, equal to those of most others; now it may seem a little singular, but it is at the same time strictly true, that the whole of his experience is decidedly unfavourable to the exhibition of all such articles, and he allows me publicly to declare, that he never has seen a single case of either scrofula or cancer, cured by the administration of panacea or catholicon, and that he entirely disapproves of their exhibition in any shape whatever.

(Signed) J. RANDOLPH.

Philadelphia, July, 1827.

Letter from Dr. Coates.

Such extensive mischief has resulted to the public, and more particularly to the poorer classes of the community, from the countenance injudiciously given to various empirical nostrums, by members of the medical profession, that it becomes the duty of every one who regards the proper interests of society, to expose, as far as possible, the fallacy of the evidence urged in favour of their *miraculous* powers. With this view, I tender you the following remarks—

Mr. Swaim, armed with a certificate, signed by Dr. WILLIAM PRICE, and another by SAMUEL MASON, the one at the time a Surgeon, and the other a former steward of the Pennsylvania Hospital, has asserted, that his Panacea received the sanction of the Surgeons of that Institution, and that its effects were attended with the happiest results in those cases in which it was employed.

The facts of the case are these. By the express desire of Dr. WILLIAM PRICE, the two managers then on duty permitted a trial of the Panacea, under the superintendance of Mr. Swaim.

This permission was necessary, on account of a law of the Hospital, which prohibited any practitioner from interfering with the treatment of the patients, unless he was regularly elected an officer of the institution; and, as the introduction of Mr. Swaim, did undoubtedly give great offence to some of Dr. PRICE's colleagues in office, the step could not have been taken without the sanction of the managers. But, in granting this sanction, those gentlemen transcended their prerogative, and encroached upon that of the board.

The remedy was employed regularly, in only two cases that I can recollect; and one other employed it after leaving the Hospital. The former, to whom the certificate of Dr. PRICE refers, were, Mrs. Tregomain, a woman of a scrofulous diathesis, affected with extensive ulceration of the hand and cheek, apparently resulting from disease of the periosteum; and Owen Laughlin—with necrosis of the upper jaw, on the left side.

In the absence of my senior colleague, Dr. T. H. RITCHIE, those patients fell properly to my care, as House-Surgeon, some time before their discharge; but, as I was unwilling to associate myself in any manner with Mr. Swaim, I took no charge of those cases, merely contenting myself with silently watching the progress of the disease.

That Mrs. Tregomain improved under the use of the Panacea, is certainly true, and that she left the house nearly well, is also true; but I can only ac-

count for the unqualified language of Dr. PRICE's certificate, by supposing that his sanguine admiration of a remedy, which shortly after led him to Europe, as its avowed disseminator, must have induced him to believe, too readily, and without sufficient examination, the apparent proofs of permanent cure, for I well recollect to have seen a *discharge from one of the ulcers on the cheek the very day of her quitting the Hospital.* Add to this, that Mrs. Tregomain assured me that her disease had been nearly cured at several different times, previous to her admission into the Hospital; and that, at the time of commencing the use of the Panacea, she had been for some time improving by the effect of other remedies; and we shall be inclined to doubt the very superior agency of the nostrum in this case.

This unfortunate woman went to Charleston or Savannah, with a professed, but illegal protector, who died there; and she subsequently destroyed herself by taking laudanum. I was informed by a gentleman who had received a letter from her landlord, during the inquiries growing out of the refusal of several spurious drafts of her companion, on a wealthy house in this city, that her despair was the result of her inability to gain a livelihood, *in consequence of the condition of her hand, which was "covered with sores."*

With regard to the case of Owen Laughlin, my recollection is clear, that I was astonished at the employment of the Panacea, in a case that must speedily terminate favourably by the powers of nature. The patient had a necrosed jaw, with the sequestrum loose. It came away in a short time, as might have been expected, and the patient recovered.

The same remedy was also employed in the case of a seaman, by the name of Anderson; but this patient was not placed under my eye, and I have no recollection of it.

Robert Ryan, to whom the certificate of SAMUEL MASON refers, was affected with necrosis, which destroyed nearly all the shaft of the bone; he generally enjoyed good health during the periods which elapsed between the removal of the sequestra; and at these times he officiated as an assistant in the surgical wards: so that the picture of misery which he is said to have suffered during the whole time of his residence in the Hospital, is certainly drawn in colours far too deep for nature. Robert suffered exceedingly at times, when a sequestrum was loosening rapidly, as occurred perhaps two or three times a year, during four or five years that I watched the case—at other times he was a gay and lively man, having no more pain to contend with, than is usual in necrosis. His last sequestrum came away while I was absent; but I have been informed, both by his physicians and himself, that, on this occasion the entire upper part of the dead shaft of the bone was removed, and Robert recovered his health with great rapidity. During this convalescence he commenced the use of the Panacea, and perhaps the most that can be said, is, that it did not retard the cure.

Thus it will be seen, that the Panacea has never been properly introduced into the Pennsylvania Hospital; and that the few cases in which it was employed were ill selected, and of doubtful result.

(Signed) R. COATES, M. D.

Letter from Dr. Griffith.

The only quack medicine alluded to in your circular of June last, of which I have been enabled to judge, is "Swaim's Panacea." This I have seen administered in several cases, generally without producing any beneficial effects. In one case, however, of obstinate and ill conditioned ulcers, it was certainly of use. Of its dangerous nature when taken without due attention, I met with a melancholy instance soon after its introduction. In 182–, I was called to a man, at that time residing in Blackberry Alley, said to be dying of a hæmorrhage. I found him discharging great quantities of blood from his mouth and nose, and threatened with suffocation from his inability to rise. The flow pro-

ceeded from large and deep ulcerations of the mouth, which implicated several small arteries. By the usual means, the hæmorrhage was arrested. On inquiry, I found that he had been afflicted with rheumatic pains, for some time, for which some friends had recommended Swaim's Panacea: he had taken about three or four bottles, when it produced a violent salivation, which ended in extensive sloughing of the jaws. He declared that he had taken no other medicine. Next day, I requested Dr. HAYS to see him with me, which he did. The man remained in a tolerably comfortable situation for a day or two; when the hæmorrhage again occurred, and, before any assistance could be rendered, he sank under the discharge.

(Signed) R. EGLESFELD GRIFFITH, M. D.

Letter from Dr. Jackson.

The first knowledge I had of Swaim's Panacea, was in the winter of 1821–22. My younger brother, from an injury received in the ankle joint, had long been labouring under a chronic inflammation of its ligaments, and probably its cartilages; and which eventuated in anchylosis. A small sinus remained, from which was occasionally discharged a sero-puruloid fluid, never exceeding a few drops at a time.

A zealous partizan of the Panacea, became very urgent that my brother should give it a trial. Satisfied that no means could remedy the condition of the joint, and that time, with warm weather, to admit of exercise, was alone required to restore his general strength, I was opposed to the quackery that was so much desired. At this time, a young lad of this city, Master W., was taking the Panacea, for a disease of the hip-joint; and, it was asserted boldly, was recovering from its employment. In a few months after, however, he died. A man whose neck was covered with scars, said to proceed from ulcers cured by the Panacea, was brought to my brother and the family, as a specimen of its wondrous powers. These means created so powerful an impression on the minds of my brother and mother, that they became very solicitous to employ it; and, believing no harm would probably result from its use, I withdrew my opposition, and my brother commenced taking the Panacea. I examined the first bottle that was procured; and immediately pronounced it to be the syrup of Cuisinier, a remedy I had been accustomed to prepare, and prescribe in old cutaneous ulcerations, and syphiloid affections. My opinion was, however, attributed to professional prejudice.*

At this time, Mr. Swaim requested me to accompany him to visit a patient in Kensington, affected, as he said, with a cancer, and who was about to commence with his medicine—that I might be satisfied of its powers. This patient was Mrs. Hooker; whose case is detailed very imperfectly in Swaim's pamphlet of "Cases cured, &c." page 37; and of which a certificate was given by the late Dr. KNIGHT.

This woman I found under a horrible salivation, brought on by an excessive use of mercury. She had been placed under this treatment by Dr. ———, of the Northern Liberties; in consequence of blotches and pimples appearing on the skin, succeeding to delivery. She had taken, according to her account, an immoderate quantity of pills, which appeared to me to contain corrosive sublimate.

At the time I saw her, the saliva was running in an incessant stream from her mouth. The fauces and gums were ulcerated, and a large ulcer existed on one

* In my brother, no marked effect resulted from the Panacea at first. It was continued until he had taken six or eight bottles. While under its use, a slight cough came on that was attributed to cold: it grew worse; became unyielding; and finally, the unequivocal symptoms of tuberculous phthisis were unfolded. Early in the spring, the expectations that had been built on the amiable character, and promising talents of this youth, were blasted by his death. I have frequently reproached myself with consenting to the experimental quackery in his case; and have apprehended that the development of tubercles in the lungs, was the consequence of the irritation of the corrosive sublimate of the Panacea, in a constitution strongly disposed to scrofula.

of the feet. Her disease was clearly mercurial, and brought on by her attending physician.

I assured Mr. Swaim, he would find no difficulty in curing that case, and the first step towards it was throwing her box of pills into the fire: good nourishing diet, even without his Panacea, would complete the rest. The infant of this woman was emaciated, from the ill condition of its mother's milk; but I do not recollect that it had any ulcerations on its surface.

Returning from our visit to this patient, I told Mr. Swaim, I was satisfied his Panacea was the same as the syrup of Cuisinier; the mode of preparing which I mentioned to him: he turned round, and asked me if I "told that to the doctors."

The next case that fell under my notice, in which the Panacea had been employed, was that of a lady of this city, who sent for me on account of a violent ophthalmia, with which she had been attacked. Whilst examining the eye, I was struck with the mercurial fœtor of her breath, and inquired into its cause. She told me her mouth had become very sore, and the teeth were so tender she could scarcely eat; and I found, on examining the gums, she was salivated. This she insisted was impossible, as she had taken nothing but Swaim's Panacea: I assured her nothing was more likely, as I was satisfied the active principle was corrosive sublimate. Mr. Swaim called the same day to see his patient; and, when reproached for the salivation that had been induced, he declared it was produced by his medicine stirring up the old mercury in her system. This lady had not, however, for more than eight years, taken a single grain of mercury in any shape. Mr. Swaim took away the bottle of Panacea, though not half consumed, and replaced it with another.

Soon after my election as one of the physicians of the Alms-House, I gave to the apothecary of that establishment, Mr. Marks, the formula for preparing Cuisinier's syrup. It was immediately employed in some cases of cutaneous ulceration of long standing, and with great success. Since that period, it has been employed in that Institution; during which, not a bottle of Swaim's Panacea has been administered to the patients. In the Alms-House, I have frequently had patients under my charge, who had been treated ineffectually by Mr. Swaim, with his Panacea; and I have had several in private practice, in which it had proved wholly inefficacious. Dr. J. Rhea Barton has exhibited to me two patients, one of true scrofula; both of whom were promised, unhesitatingly, a cure from the Panacea, but whose disease became infinitely worse under the treatment, and were finally abandoned. One of them has since been entirely cured under the care of Dr. Barton.

(Signed) SAMUEL JACKSON, M. D.

Extract of a Letter from Dr. Emlen.

I have met with a great number in this city, and have heard of many others, who have taken the panaceas, catholicons, &c. but principally that called Swaim's Panacea; and of all the patients I have met with, who have used the last named medicine, I have only heard *one* out of the whole number say that he was benefited by its use.

The first patient who came under my notice, who used Swaim's Panacea, was H. C. an engraver, in Fifth street, near Race. I think it was in 1821. I visited him twice only, with a scrofulous tumour, when I received a note from him, stating he had called in other medical attendance by the solicitation of his brother, &c. A few weeks after, the said H. C. called on me, asked my pardon, and expressed great regret that he had yielded to others in employing a Dr. Swaim, and that he had taken seven bottles of his medicine, at five dollars a bottle, without the least benefit; when the said Dr. Swaim finding no improvement, had gone to the apothecary who had put up the medicine he had been using by my direction, and directed some of the very same, which the patient knew at once by its taste and appearance, and being disgusted with

the bottles of molasses, and this stratagem of his doctor, he soon discharged him. This patient, after making what I considered a sufficient apology, I took under care again, and in a few weeks he was discharged well.

Another case was a slave of E. H. from Charleston, with a number of scrofulous tumours, and a troublesome cough, which I had no doubt was the result of incipient phthisis. She was placed under my care, but her mistress was informed by me that medical treatment was not likely to be of much service. She wished to try the Panacea of Swaim, of which she had heard and read so much in the cure of scrofula. I stated to her that I had seen it used in many cases of genuine scrofula, and not in any one instance with any benefit whatever. E. H. however, upon returning to Charleston, placed her slave upon the use of the Panacea, in the purchase of which she spent seventy dollars; and when she returned again to Philadelphia the ensuing summer, placed the slave under the immediate care of William Swaim, who continued his visits, and his bottles of molasses and corrosive sublimate, till the patient was brought under a profuse ptyalism, and the doctor ran away with his bottle, that she might not be tempted to take more. The mistress informed me after this she sent again and again for the run away doctor, who sent word as often, he would be there *directly*, but never came near his patient again, who sunk rapidly, and died immediately after arriving at Charleston in the autumn.

The next case I recollect was a boy in the Orphan Asylum, in Cherry street, with scrofulous tumours all over the body, who had been several years afflicted. Drs. Otto, Hewson, and James Rush, who were associated with me, had all had the boy under care; a bottle of Swaim's Panacea was bought, and the boy placed under its use. I stated I believed it would not be of service, and that I thought it a wasteful expenditure of the funds of the institute. He died before he finished one bottle.

The next was a poor woman of the name of C. T. who got her living by selling pennyworths of yeast, gingerbread, &c. in Cherry, just above Seventh street. This poor woman took the medicine for two years, for some ulceration of the throat, &c. and expended, as she declared to me, more than sixty dollars in the purchase of Swaim's Panacea, from the owner himself. She afterwards moved to Fayette street, where she died with the disease within a few months past. She informed me, before she died, that she told the said William Swaim again and again, when she visited him, during the two years, that it done her no good, but that he always insisted that the next and the next would cure it, till he exhausted her of all her funds, and she could go no longer. After she ceased taking it, and had stated to her friends she was worse, and that it did her no good, she declared to me that the said Swaim, who had stripped her of all her money, called upon her in Fayette street, and before he had even entered the house, commenced railing at her "*for telling it about that his medicine had done her no good.*"

The next case which came under my notice, was E. D. from Charleston, who is now under Swaim's care, and came on for the express purpose, notwithstanding she informed me that she received no advantage whatever from taking twelve bottles of his panacea, and she declared she "only wished she had thrown the money she paid for it in the street, that some one might have been benefited by it." This lady was at my house the last week, and stated she had suffered excruciating pain all the summer from the caustic applications of Swaim to her chin and lip—her under lip is entirely destroyed by his applications, the whole length, and she presents a horrible aspect. When asked if the disease was getting better, she replied "*she hoped so.*" This lady, as well as another from Maryland, both have been patients of Dr. Physick, as well as Mrs. E. of whom so much has been said, and it was at the recommendation of the last-named that they were induced to come on to this city, and place themselves "under the care of the celebrated Dr. Swaim, who cured where Dr. Physick could not." It is reported about the city that both these ladies are nearly well.

I could relate other cases, but they would occupy too much time of the committee. I have seen a number of poor sailors who applied for admission in the hospital after expending all the funds they had, in this and other panaceas; and a poor carter, who stated to me he had spent fifty dollars in Swaim's Panacea, for rheumatism, which done him no good whatever, and that his son had spent twenty-eight dollars in the same medicine.

(Signed) SAMUEL EMLEN, Jn.

September 26th, 1827.

Many other documents have been received, but we have not room at present for their insertion. An analysis of them will be found in the report of the committee.

These documents most conclusively prove:—

1st. That the Panacea of Mr. Swaim, *is composed of articles long in use and well known to the profession.*

2d. That at least one of these articles is of a most active nature, and its administration highly dangerous, and even productive of fatal effects, unless given with great caution, and its operation closely watched.

3d. That the Panacea of Mr. Swaim has been useful in a very limited number of diseases alone.

4th. That even in these affections it often fails to effect a cure.

5th. That cases which it has failed to relieve, have been cured by the articles of which the "Panacea" is composed, judiciously combined, and aided by other appropriate medical treatment.

6th. That the certificates granted to Mr. Swaim by the medical men of this city, were given when their experience with the remedy was very limited; and that a more extensive trial with it has *not* confirmed the favourable impressions they at first entertained of its utility.

7th. That many of the cases supposed to have been perfectly cured by the "Panacea," were only temporarily relieved, and in others no benefit whatever was received from the use of that nostrum.

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An Introductory Lecture to the Institutes of Medicine. By SAMUEL JACKSON, M. D. Assistant Lecturer to the Theory and Practice of Medicine and Clinical Medicine in the University of Pennsylvania.—This eloquent and interesting lecture has been published by the class. It presents a sketch of the subjects comprehended in the institutes of medicine; an attempt to prove that medicine, as a science, rests upon principles; that its improvement depends on their cultivation and accurate development; and that by no other mode can the treatment of disease be rendered safe and methodical.

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MARTINET'S *Manual of Pathology.*—We are happy to announce that Messrs. Carey, Lea and Carey, have re-published this valuable little work. We have already expressed our sense of its merits, and will now add as further evidence of its value, that it has gone through two editions in France, and a like number in England, in less than one year.

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System of Pharmacology.—JONATHAN A. ALLEN, M. D. Professor of Materia Medica and Pharmacy, proposes to publish "A System of Pharmacology; designed for the use of the Vermont Academy; and also as a Manual for the Practitioner of Medicine.

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Journal des Sciences Naturelles de l'Amérique du Nord. Publié par XAVIER TESSIER, *ci-devant Editeur du Journal de Medecine de Québec.* Dr. Tessier, former editor of the Quebec Medical Journal, proposes to publish at New York, a periodical journal in the French language under the above title: a volume of three hundred pages is to appear quarterly—subscription six dollars per annum.

New Edition of Professor Chapman's Therapeutics.—Messrs. Carey, Lea and Carey, have recently published the fifth edition of the Elements of Therapeutics and Materia Medica. To which are prefixed two discourses on the History and Improvement of the Materia Medica, originally delivered as introductory lectures. By N. Chapman, M. D. Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania. In two vols.

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Lecture Introductory to the Course of Anatomy and Physiology, in Rutgers Medical College, delivered on Friday, Nov. 2, 1827. By JOHN D. GODMAN, M. D. Professor of Anatomy and Physiology. Published by the class.—We had marked several extracts from this eloquent lecture for insertion, but we have space only for the following.

After observing that general anatomy is to anatomical science what chemistry is to the other branches of natural science, Dr. G. observes, "The researches of Bichat, led him to think that he could establish twenty-one elementary or generating textures, constituting all the peculiar organs. The labours of his successors, as we shall hereafter state more fully, have led to the adoption of other classifications, by which the number of elementary textures has been advantageously lessened.—These textures wherever found, are respectively governed by the same general laws, are possessed of the same susceptibilities, and in diseased conditions exhibit similar phenomena. Hence, we may even in the very inception of our subject obtain a glimpse of the pervading influence which such knowledge of the general laws governing the intimate organization of our bodies must exercise upon medical science. One of the greatest and most beneficial consequences of a proper acquaintance with General Anatomy, is the death-blow given to the notions so flattering to our ignorance, of specific and incurable diseases; and not less important, the termination of the science of bestowing upon symptoms, names expressive of some real entity, which is called the disease. When once we have learned the General Anatomy of the nervous systems of animal and organic life, the true character and actions of the vascular system, in its various modifications, we no longer waste our time in allowing morbid conditions to become established, that we may bestow names upon them, and apply an ordained or routine course of treatment; but, we trace the action of the offending cause to the part which originally suffered, and guided by the established laws of the healthy texture, we take the surest and speediest means of restoring that equilibrium which is essential to the performance of the vital functions. Under the influence of a proper knowledge of the textures composing our organs and their modes of vitality, we are secured from the folly of hoping for *remedies* or specific cures, for supposed specific diseases. We regard remedial agents solely as they are capable of operating changes in the general and special actions of the system —as they influence the great functions of digestion, circulation, and nutrition. This advantage is of the highest importance to our profession, as it leads us to occupy ourselves, not with vain attempts to discover remedies for given diseases, but to determine in what degree medicinal agents effect changes in specific textures, and in how far they are capable of impressing and controlling the functions of organic life.

"Perhaps the improvement of our profession, and the good of our race has been more injured by the prejudices entertained on the subject of diseases and remedies, than from any other cause. Not only did the search after remedies lead men from the true path, but such researches tended to the eventual destruction of inquiry by the total darkness into which they led, to say nothing of the extravagancies of doctrine which were from time to time sent forth.

"Until the period when the science of General Anatomy may be said to have commenced its existence our profession may be truly declared to have been destitute of fixed, rational principles, and fairly entitled to the appellation of a conjectural art. Without in the least wishing to detract from the merits of the great men who preceded this period, it is undeniably true, that their works are

of comparatively slight value, for want of the principles which have since been deduced from the structure of textures and their dependencies of function. I know that some may feel tempted to exclaim against the idea that we should rashly judge those we have been taught to revere in Medicine: We may be told of the profound and accurate observations of the divine old man of Cos, the Father of Medicine; of Sydenham, the Hippocrates of England; of Boerhaave, no less an honour to human nature than the glory of the medical profession; of Hoffman; of Cullen; and our worthily celebrated countryman Rush; yet the truth need not be concealed, that it were better for the interests of mankind and the future character of the medical profession that all of these and a host of lesser medical writers should be blotted out forever than that the works of Bichat should have been withheld.* With no better guides than the old books we might go darkling along forever, gathering as we advanced a few unequivocal truths at the price of infinite losses of life and the endurance of innumerable sufferings; but with a science resting upon facts, and not merely of facts, but of such as establish the most universally operative principles, and explain the most complicated and apparently mysterious operations in nature, the condition to which Medicine may be perfected can scarcely be imagined unless by comparing what has taken place since the impulse of this science has been felt by our profession, with what previously existed. If proofs be demanded that these opinions are not mere enthusiasm—look at the bills of mortality since true views of structure and function have exploded the old doctrines of idiopathic fever; since dropsies have ceased to be regarded as original diseases; since the venereal has laid aside its supposed specific nature and ceased to require its specific remedy—since the name of consumption has ceased to be applied to all the affections of the lungs, and to most of those of other organs of the chest! Look at the modes of practice generally employed by such as are within reach of the improvements of the times although they are too frequently ignorant of the sources whence all their advantages flow, and every confirmation that can be desired for our positions will be found. It is from the establishment of true principles alone, that our profession is to hope for a continued and successively enlarging career of improvement, for however matters of fact may be valuable in themselves, it is only as they enable us to form, or tend to support some general or universal law or truth, that they deserve our especial regard."

NECROLOGY.

It is with extreme regret that we have to announce the death of our distinguished collaborator, the Hon. George Holcombe, M. D. a member of the House of Representatives of the United States, which took place at his late residence in Allentown, Monmouth County, New Jersey, on the 14th ultimo. Dr. Holcombe was eminent as a physician, and when released from the discharge of those honourable public duties which his fellow-citizens conferred upon him as evidence of the regard they entertained for his talents and integrity, enjoyed an extensive practice. His mind, though well stored with the learning and observation of his predecessors and contemporaries, relied less upon these adventitious supplies, than upon the application of its own fertile resources. Aided by these last qualifications, united to powers of quick perception and correct judgment, his practice was at once original, decisive, energetic, and successful. His useful qualifications were well set off by the talents he displayed for the ornamental branches of education, which in conjunction with great amiability of character and urbanity of manners, rendered him an agreeable associate, and an ornament to society.

* In saying this, we particularly refer to the direction and impulse given to the Medical mind, by the researches of this great man, whose writings may justly be considered to have the same influence upon Medicine as the writings of Bacon had upon general science. Though not containing in themselves the whole of what is necessary to science, yet possessing the germs of vast improvements and indicating the true course by which future investigators may advance until the desired perfection be attained.

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ERRATA.

Page 37, line 13 from the top, for "*coast*," read *coats*.
119, " 4 " bottom, for "*Table II.*" read *Table I.*
138, " 12 " bottom, for "*males*," read *females*, and for "*females*," read *males*.
249, " 28 " bottom, insert *not*, before "*to*."
300, " 13 " top, for "*those organs*," read *that organ*.
413, " 3 " bottom, for "*physiological*," read *philosophical*.
415, " 16 " top, for "*peltince*," read *pettinee*.